OUTDOOR LIFE

NOV 1915

PRICE 15¢

LIBRARY OF CONG
NOV
5
1915
AGRICULTURAL DIVISION

Tobacco Habit BANISHED in 48 to 72 Hours

Immediate Results

Trying to quit the tobacco habit unaided is a losing fight against heavy odds, and means a serious shock to your nervous system. So don't try it! Make the tobacco habit quit you. It will quit you if you will just take Tobacco Redeemer according to directions.

It doesn't make a particle of difference whether you've been a user of tobacco for a single month or for 50 years, or how much you use, or in what form you use it. Whether you smoke cigars, cigarettes, pipe, chew plug or fine cut or use snuff **Tobacco Redeemer** will positively remove all craving for tobacco in any form in from 48 to 72 hours. Your tobacco craving will begin to decrease after the very first dose—there's no long waiting for results.

Tobacco Redeemer is absolutely harmless and contains no habit-forming drugs of any kind—the most marvelously quick and thoroughly reliable remedy for the tobacco habit the world has ever known.

Not a Substitute

Tobacco Redeemer is in no sense a substitute for tobacco, but is a radical, efficient treatment. After finishing the treatment you have absolutely no desire to use tobacco again or to continue the use of the remedy. It quiets the nerves, and will make you feel better in every way. If you really want to quit the tobacco habit—get rid of it so completely that when you see others using it, it will not awaken the slightest desire in you—you should at once begin a course of **Tobacco Redeemer** treatment for the habit.

Results Absolutely Guaranteed

A single trial will convince the most skeptical. Our legal, binding, money-back guarantee goes with each full treatment. If **Tobacco Redeemer** fails to banish the tobacco habit when taken according to the plain and easy directions, your money will be cheerfully refunded upon demand.

Let Us Send You Convincing Proof

If you're a slave of the tobacco habit and want to find a sure, quick way of quitting "for keeps" you owe it to yourself and to your family to mail the coupon below or send your name and address on a postal and receive our **free** booklet on the deadly effect of tobacco on the human system, and positive proof that **Tobacco Redeemer** will quickly free you from the habit.

Newell Pharmacal Company
Dept. 387 . St. Louis, Mo.

Mail Coupon NOW for FREE Booklet

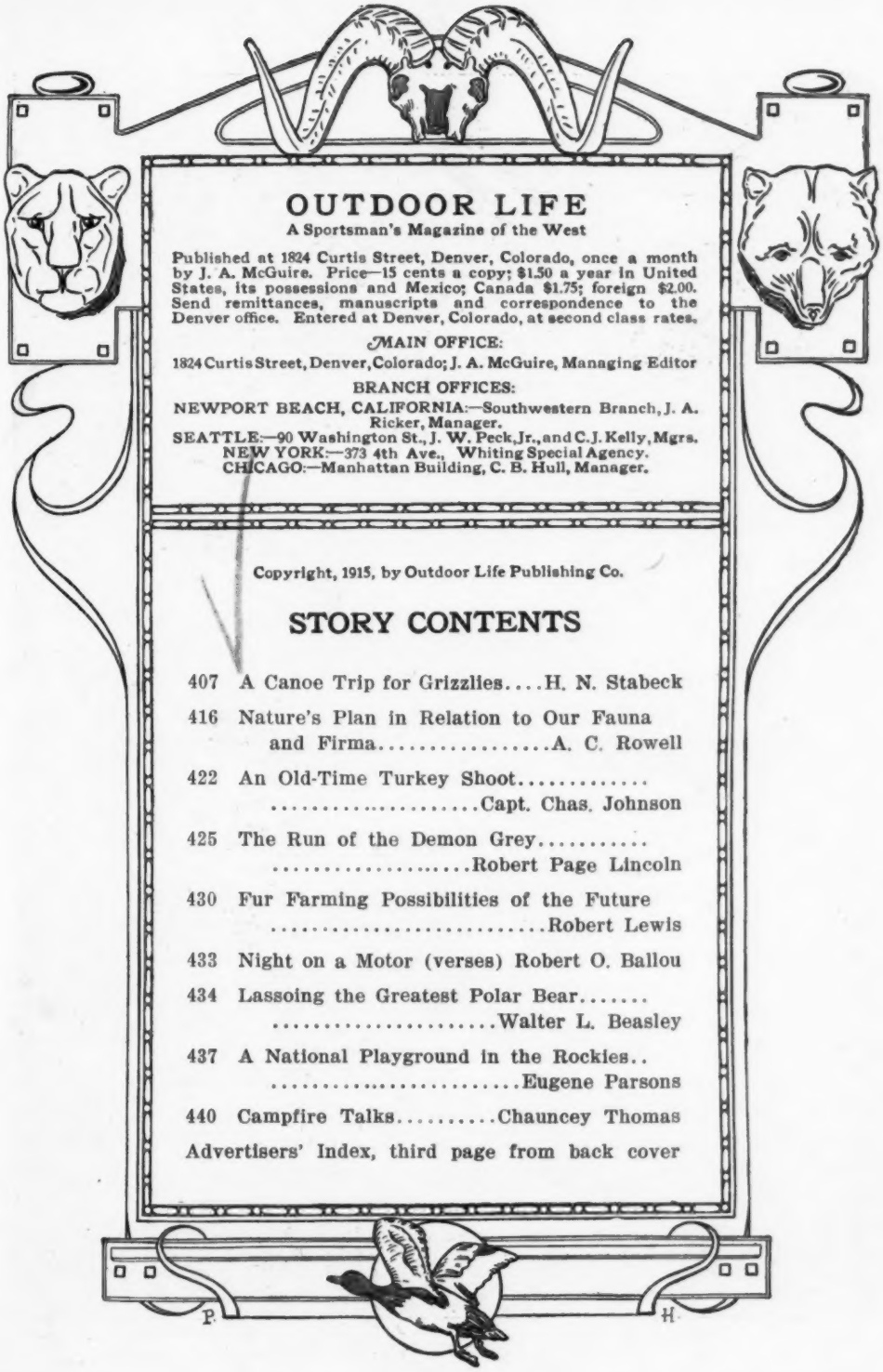
NEWELL PHARMACAL CO.,
Dept. 387 , St. Louis, Mo.

Please send, without obligating me in any way, your free booklet regarding the tobacco habit and proof that **Tobacco Redeemer** will positively free me from the tobacco habit.

Name .....

Street and No. .....

Town ..... State .....



OUTDOOR LIFE

A Sportsman's Magazine of the West

Published at 1824 Curtis Street, Denver, Colorado, once a month by J. A. McGuire. Price—15 cents a copy; $1.50 a year in United States, its possessions and Mexico; Canada $1.75; foreign $2.00. Send remittances, manuscripts and correspondence to the Denver office. Entered at Denver, Colorado, at second class rates.

MAIN OFFICE:

1824 Curtis Street, Denver, Colorado; J. A. McGuire, Managing Editor

BRANCH OFFICES:

NEWPORT BEACH, CALIFORNIA:—Southwestern Branch, J. A. Ricker, Manager.
SEATTLE:—90 Washington St., J. W. Peck, Jr., and C. J. Kelly, Mgrs.
NEW YORK:—373 4th Ave., Whiting Special Agency.
CHICAGO:—Manhattan Building, C. B. Hull, Manager.

Copyright, 1915, by Outdoor Life Publishing Co.

STORY CONTENTS

407 A Canoe Trip for Grizzlies....H. N. Stabeck

416 Nature's Plan in Relation to Our Fauna and Firma.....A. C. Rowell

422 An Old-Time Turkey Shoot.....Capt. Chas. Johnson

425 The Run of the Demon Grey.....Robert Page Lincoln

430 Fur Farming Possibilities of the Future .....Robert Lewis

433 Night on a Motor (verses) Robert O. Ballou

434 Lassoing the Greatest Polar Bear.....Walter L. Beasley

437 A National Playground in the Rockies.. .....Eugene Parsons

440 Campfire Talks.....Chauncey Thomas

Advertisers' Index, third page from back cover

THE END OF THE JACK JOHNSON BEAR.

OCT 29 1915
©CLB342462

OUTDOOR LIFE

Vol. XXXVI. NOVEMBER, 1915 Number 5

A CANOE TRIP FOR GRIZZLIES

H. N. STABECK

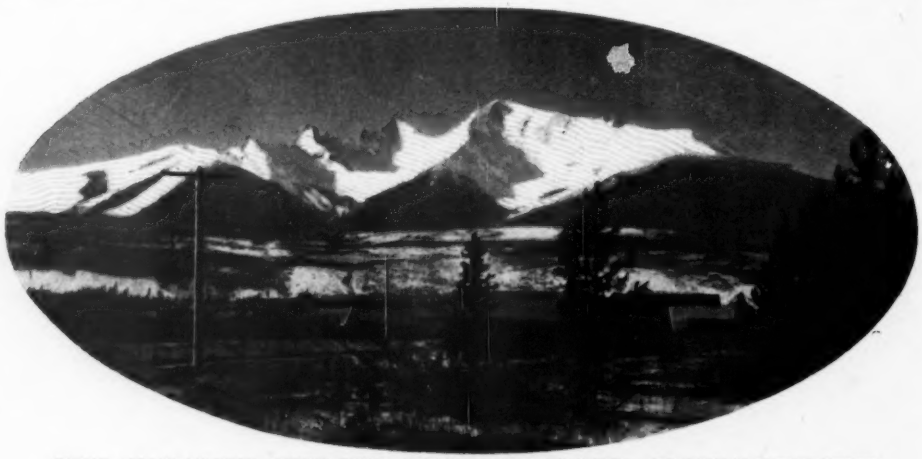
For almost a year, John B. Gilfillan, Jr., and I had been arranging and anticipating a canoe trip in British Columbia, the outing to include a hunt for grizzlies. After considering carefully all the information we could obtain by correspondence with guides in various localities, we concluded to try a trip down the Canoe and Columbia Rivers through the Selkirk Mountains, outfitting from Tete Juan Cache, formerly a stopping place for Hudson Bay Company trappers and traders, now a small village on the main line of the Grand Trunk Pacific Railway, a short distance west of the Yellowhead Pass. Added to our knowledge that the Selkirks are among the highest mountains in America, comparing favorably with the Alps in the grandeur of their scenery, was the alluring report that during one month's time the year previous, in this same territory, a party of three had killed nineteen bears, six of which were grizzlies.

We had engaged F. H. Riggall from Southwestern Alberta as our guide, and his partner, Watmough, as our cook. Riggall in turn made a trip to Tete Juan Cache a month in advance and made arrangements for procuring two good rivermen and canoes. He advised us that old-timers predicted an early season for bear, and we accordingly made reservations that would land us in Tete Juan Cache on May 1, 1914.

Riding from Winnipeg west on the new Grand Trunk Pacific, the latest continental line to be completed in Canada, we crossed the fertile prairies of the great provinces of Manitoba, Saskatchewan and Alberta, where a half century ago hundreds of thousands of buffalo roamed at will. Today this vast plain is a sea of golden wheat, and the production of grain here is destined to make the Canadian empire the bread basket of the world. In Western Alberta, the landscape changes to rugged and snow-capped mountain peaks. Nearing the Yellowhead Pass, glaciers and hugs snowslides crown the great continental divide. We pass the magnificent Mount Robson, the highest peak in the Canadian Rockies, and roll into Tete Juan Cache, which could correctly be described as "some town." The Canadian Northern Railway, which is dividing honors with the C. P. R. and the G. T. P. in piercing the Canadian Rockies to the Pacific coast, were doing some surfacing and bridge work south of Tete Juan Cache. The population of this burg consisted of the C. N. R. crews in transit, "out to work and out of work." Business was confined principally to furnishing these

crews or the floating population with the necessities and luxuries of life, usually purchased in one package—whisky at the handsome price of $7.50 per quart. This represented the purchasing power of a week's work at Tete Juan Cache. Some of these energetic gentlemen could consume a quart of this elixir of life in a few gulps, then put up a pugilistic exhibition with some comrade, spend the night in jail and be on the surfacing crew the next morning.

Riggall was at the train to meet us, as he had arrived a day or two ahead to complete arrangements for the rivermen and canoes. In this we received the disappointing news that one of the

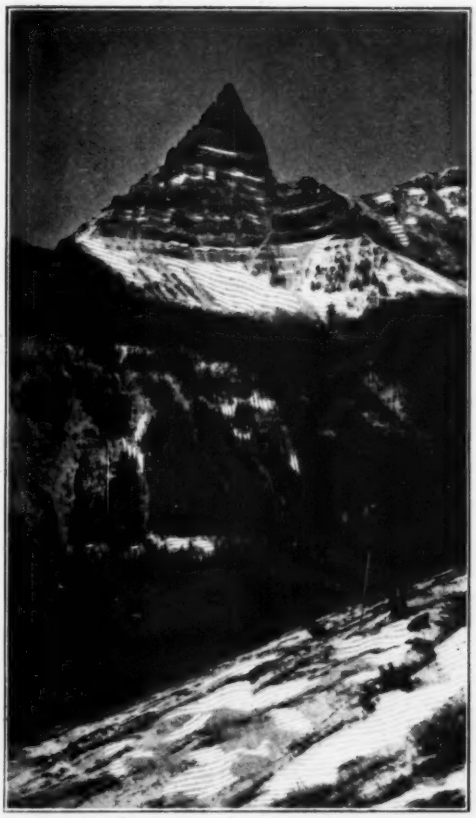


TETE JUAN CACHE, WITH MICA MOUNTAIN (10,200 FT)., IN THE BACKGROUND.

men he had expected to engage had left the country, and the other, Bill Esswein, had just received an appointment as forest ranger. Riggall, however, had hopes of employing two other rivermen, Dave Henry and Everett Bragardas, who had a ranch near by, where we expected to start on our river jaunt.

About this time our plans received another jolt. Riggall got word that his wife was dangerously ill and that he must return home immediately, which he did. We felt as tho we were stranded on a raft in the Pacific Ocean. We, however, sought relief by looking up our newly made friend, Bill Esswein, who would need no make-up or voice culture to represent the Eastern idea of a typical Western character. We presented our situation to him in the most tragic manner at our command, and my friend Gilfillan has no little dramatic ability. We had said all there was to say. Esswein made no immediate reply. We could only hope he was figuring on some way to help us. I remember distinctly that I started to whittle on a pine stick several inches thick and had it reduced to the useful size of a toothpick during the awful suspense. Gilfillan was gazing yearningly far beyond Mica Mountain, no doubt dreaming of taxicabs, soft music and bright lights back East. We could feel our insignificance as we awaited our fate at the hands of this Western autocrat. We were seated on the banks of a mountain stream. I was pondering over our predicament, meanwhile watching with deepest sympathy a trout as it hung momentarily in the balance trying to mount the rapids and then shoot clear of the riffles to smooth water above. Then came a thunder clap. Esswein, with droll slang, made a speech:

"Reckon I can throw you a line and maybe give you a pull. Mack and John Narboe, skookum [meaning "good" in Indian] bear hunters, are cached out here on the creek. Just packed in from a season's trapping on the Canoe. Old boys, one foot in the grave and



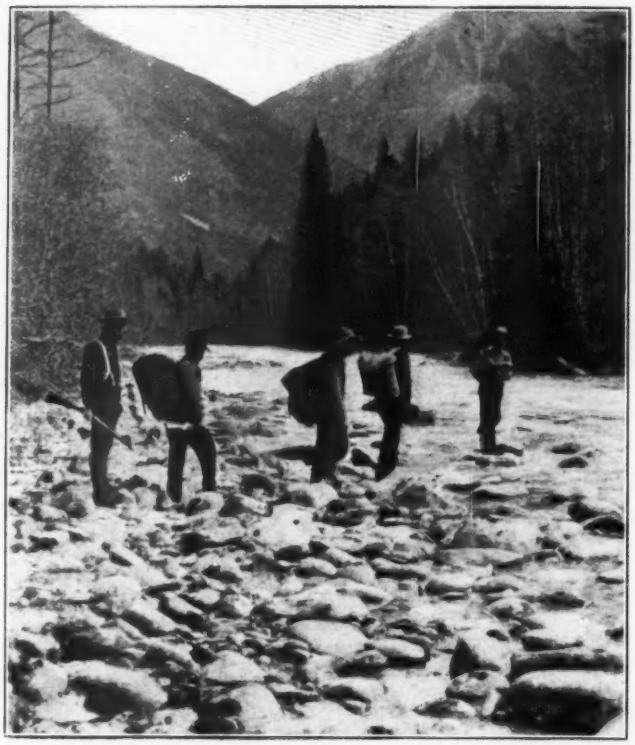
A MOUNTAIN PEAK IN THE SELKIRKS.

other on a banan' peel, but good goers in the hills if they get plenty o' sugar. I reckon they ain't refusing none of Uncle Sam's due bills from sartin dudes around. Them air their specialty. I calculate them boys would get swamped in a canoe on the Columbia. She's a bad one this time o' year, but my brother Phil is in Revelstoke. I'll wire him, and if he ain't took water or struck an eddy that filled him to the gunwales, he'll meet us at Goat River. She's about two weeks' trip with his little Peterborough on high water. In two days I am due out on my beat down the Canoe River as far as the Columbia, and I figure to start a day ahead and talk sense to Bragardas and Henry about their canoe and going down the river with us."

This man had us spellbound with his carefully laid plans to insure us a hunt and a canoe trip. We recognized the names of Mack and John Narboe as being the guides of W. T. Hornaday, author of "Camp Fires in the Canadian Rockies," and we did not question the ability of Phil Esswein with a canoe. The result was that after another day's delay in getting our outfit together, we got started for the river, about thirty miles away. We had engaged the only available team in town to cart our luggage. One glance at the team of cayuses and the spring wagon, and we knew that five of us were elected to hoof it to the river. We arrived at Canoe River at nightfall, after an all-day tramp in the rain. Bill Esswein

GOAT RIVER.

was awaiting us with a campfire, and we needed no urging in putting away the square meal he had prepared for us. We remained here a day and called



PACKING TO A SIDE CAMP.

upon Bragardas and Henry, and with a little coin talk in addition to the "sense" Esswein had dealt them, we procured a twenty-six-foot canoe and arranged that they join us two weeks later in a smaller canoe to go down the Columbia.

Early next morning we pushed out into a roaring stream with the big canoe, which we immediately christened the "Great Western." It proved to be very safe and steady, but hard to handle in fast water. Esswein led the way in his light seventeen-foot government canoe. The Great Western was carrying five men and a thousand pounds of duffle and provisions. We were on the water just thirty minutes when we received our first ducking. In attempting to run the first rapids, the Great Western became unmanageable and headed straight towards shallow water and big rocks. Had we struck them at the pace we were going our canoe would have been crushed like an eggshell. Gilfillan, who was captain of our ship, called out, "Jump and hang onto the canoe!" We saved our outfit, but went into water waist deep, by no means comfortable on a frosty morning. However, we were soon gliding along in smooth water again, enjoying the splendor of snow-capped mountains, narrow valleys with luxurious vegetation and rocky cañons in a wonderful, ever-changing panorama.

We camped about twenty-five miles downstream the first night. We were another day in reaching the jam, where we would have almost a day's portage over 400 yards of dead falls piled and twisted in every direction to a height of ten to fifteen feet. Close to the jam was a natural hot springs which we visited. The water, which contained a large amount of mineral matter, came boiling out of the mountain side in huge torrents, forming a beautiful little lake in the valley a short distance below. It was interesting to see a hot springs in its original state, without health resorts built up around it. Indians regarded it as having great healing power and came there frequently for baths.

After having made the portage at the jam, we were getting into country low enough so that we should see signs of bear if there were any out; but during the next two days on the river to Ptarmigan Slide, where we had intended to make our first stop for hunting, we could see nothing to indicate that the bears were not still enjoying their winter slumbers. It was evident that we were at least a week early for the bears to be out generally. As a few of the "early birds," and oftentimes the big ones, come out in advance of the wholesale awakening of the bear herd,

we decided to camp about a mile from Ptarmigan Slide, where we could watch it with our field glasses, our intention being to stay there until the bears showed more signs of life. The Narboes had trapped and hunted the previous spring on Canoe River and very frequently mentioned bears that they had seen in various localities. They had them all named, a characteristic habit of some guides, and we heard a great deal of a big bear on Ptarmigan Slide christened "Jack Johnson," and another on Goat River called "Maude S." We were soon talking of Jack Johnson, Maude S. and others as tho they were members of the party.

The first evening at Ptarmigan camp we were diligently using our field glasses on the Slide, when Mack Narboe suddenly exclaimed: "There sure is Jack Johnson, bigger'n a mountain, and no joke!"

On a grassy ledge, almost at timber line, was a bear that looked as large as a steer. Right then and there, Mack named Gilfillan and me the "White Hopes," with himself as manager, and with an unsigned agreement that we start at about 11 o'clock next morning, making a detour up high enough around the mountain so that his honor Jack Johnson would not get our wind, arriving at his favorite feeding grounds at about 4 o'clock in the afternoon. We were off at the appointed hour next morning, but were a little behind schedule in getting into Jack's neighborhood by reason of encountering snow, thru which we had to wallow up to our hips. We had just seated ourselves on some large rocks and were getting our lunch bag opened when I climbed a few feet higher to get a better look at the slide, and saw just below me in some alder brush not over a hundred yards away, a monster silver-tip. I tried to call Gilfillan in a whisper, so that we might both shoot, but the bear saw me, and there was no waiting for a better chance. I got in only one shot from my .333 Jeffrey. The bear tumbled, but was up again and disappeared in the brush before I could shoot a second time. Gilfillan pumped more lead at him from his Mannlicher as he caught sight of Jack going as tho he were as healthy as the original J. Johnson. We waited probably ten minutes for our bear to put in an appearance on the other side of a patch of small timber into which he ran, but he had disappeared. We took up the trail and had not followed it for more than seventy-five yards, when Mack yelled: "There he is!"

I turned just in time to see the bear rising on his haunches not thirty feet away, but "bang!" Gilfillan was there with his Mannlicher and had plugged him just back of the ear. Mack Narboe afterwards remarked: "That Gilfillan boy sure has some speed with a smoke wagon."

The mighty Jack Johnson had fallen, but it took two white men to do it.

It was too late to skin out the hide

JACK JOHNSON'S HIDE AND JOHN B. GILFILLAN, JR.

A SNOW-SLIDE ON GOAT RIVER.

that evening, so we left him there, and Mack with John Narboe returned the next day and finished the job. The Narboes estimated that he weighed 530 pounds. The hide measured 8 feet long and 8 feet 3 inches across at the widest points.

We remained at Ptarmigan camp for a week longer, watching the Slide, but never did we see sign of another bear on it. The next move was to the mouth of Goat River, a distance of about fifty miles. From Goat River camp we made a side excursion for a few days up the river. There were several slides four to eight miles upstream, where several grizzlies were reputed to have their homes, particularly the Maude S. She had been wounded by Phil Esswein and had sprung a trap the year previous, but was still on the turf. We hunted these slides for several days without seeing any bear signs save one small cub track. Our method of hunting was the same as at Ptarmigan camp, watching the bare slides thru field glasses. This becomes rather monotonous, but here we found more or less entertainment, as during the four days we saw more than a hundred goats, sometimes as many as a dozen being in sight at one time. The old billies and nannies were not inclined to move around much and would graze in a radius of fifty yards for hours. The younger goats were at times very playful, chasing each other around rocky ledges and putting up sham fights. Sometimes they seemed to court death as they crossed on the face of an almost perpendicular wall.

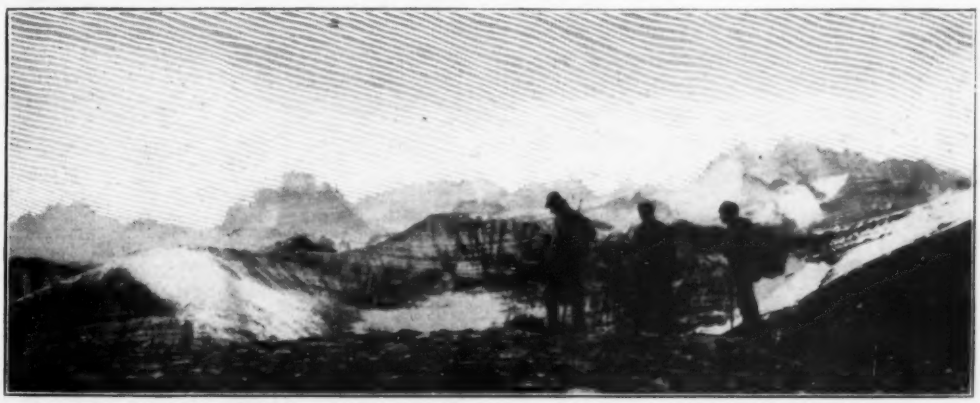
It was while we were thus amusing ourselves that we were brought up standing by a loud crash and a report that was deafening. Looking up, we saw thousands of tons of snow and ice come rushing down the mountain side across the river, carrying with it immense boulders and tearing down trees and brush in its path. It continued until a large volume of the snow had slid into the river, throwing sprays of water high into the air. A heavy fog or mist overhung the slide area for many minutes afterwards. After so much commotion, we decided that hunting was over with on that slide for the day. We, however, made an examination to see if there were any dead or crippled grizzlies in the debris, but apparently they had had engagements on some other mountain that day. Even the goats that had been in the right of way of the avalanche had seemingly taken warning and were safe high up on a cliff overlooking the slide.

We had expected to hunt for only one day more from this side camp, as it was nearing the time when we could expect Bragardas and Henry to overtake us, and Phil Esswein would possibly be coming in from Revelstoke. Gilfillan decided to return to the main camp while I hunted the last day on Goat River. John, Mack and I stationed ourselves on the opposite side of the river that day, as much interested in watching a slide and enjoying the pranks and maneuvers of a bunch of goats close by as we were in looking

out for bear, when John Narboe suddenly piped out: "Gee, I see a grizzly —a big one! Maude S., I'll bet!"

We were not slow in getting our glasses focussed on the point John indicated. Sure enough, there was a grizzly feeding away up in a small open patch, but so closely surrounded by heavy alder brush that there was no chance of stalking her close enough to get a shot. We decided to wait for a better opportunity and herded that bear for four hours, watching her go from one place to another. She laid down about thirty minutes at noontime, but in an inapproachable spot unless we flushed our quarry. About 3 o'clock she moved towards a small cañon where it was possible for us to go thru the timber with the wind from the bear towards us. It was about an hour's climb. We hurried up the mountain side, but were only half way up when it started to rain. Mack feared the bear would move into the timber if the rain continued, so we made double-quick time for the balance of the way, and we were none too early. When we emerged from the timber the bear was going up the mountain, about 100 yards above us. I lost no time in getting into action. At the first shot she dropped to her knees and I thought for a moment she would lose her balance and tumble over into the cañon, but no such luck. She gathered herself together and was away on three legs before I could shoot again. I kept a stream of lead going her way as long as I could see the brush move. We followed her up and found that she was bleeding profusely. Mack judged, from where she bit herself after the shot, that she was hit low in the shoulder and might travel some little distance. He advised that we be ready to shoot at all times, as she might be down just ahead of us, and would probably charge at the first scent of danger. We could see only about twenty yards ahead of us in the dense alder brush. The sensation of following a bloody grizzly trail under such conditions was more or less of fear, yet there was something fascinating about it, and we ploughed thru the brush as tho our lives depended on running that bear down. It soon commenced to rain harder and the blood washed out, making it impossible to follow the tracks. We worked until dark, but had to give up Maude S. as lost. Bill Esswein, however, located her, a badly crippled bear, a few days later and shipped the hide to me. It was as the Narboes had stated, a she-bear, with more silver-tipped hair than our first capture. She measured 7 feet long and 7½ feet wide.

We returned to the main camp the next day and found that Henry and Bragardas had arrived with a twenty-foot canoe. Phil Esswein had just come in from the opposite direction with a seventeen-foot Peterborough. We were anxious to get started on our way, as we wished to go down the Columbia before the water got too high.



UP AMONG THE CLOUDS.

A GROUSE FLEW UP BEFORE US.

We had acquired a great deal of respect for this famous stream from what we heard of the toll of life it had taken. We immediately made plans to start the following morning. The seventeen-foot canoe would not carry much of a load in fast water, hence we decided to go as light as possible. We arranged that the two Narboes and Watmough return up river with the Great Western and go out via Tete Juan Cache. Phil and Gilfillan started in the Peterborough, Henry and I in the larger canoe.

We had not been on the river more than three hours before Gilfillan and Phil, who were ahead, sighted a grizzly on a sand bar. Before Gilfillan could shoot, the bear had started for the brush. Gilfillan, however, knocked him down at the first shot, but Mr. Bear was up and out of sight in a moment. We tracked him for some time and hunted thru the swamp and timber for several hours, but this bear got away also.

We soon arrived at the mouth of the Canoe River and swung into the Columbia, which contains a volume of water in excess of the Mississippi and several times as swift. In places the river runs smoothly, stretching out to a width of a half mile. Suddenly around a curve the banks narrow until this huge body of water is encased between perpendicular walls of stone, in the width of an ordinary street, where the water lashes, leaps and boils in a fury that seems to test the strength of the very mountains that enclose it. We reached Eight Mile Creek, about sixty miles from Goat River, the first day. Here we intended to hunt for a few days on slides tributary to the creek, but we learned that a member of a surveying crew had come up the river and had killed two grizzlies on the creek slides the day previous. As he had done considerable shooting, we deemed

A TRAPPER'S HOME DURING THE FUR SEASON.

it a waste of time to hunt in that vicinity until after a few days at least. We camped here, however, and decided to go as far as Smith Creek the following

day, about forty miles further downstream. This was the last and best place for a successful grizzly hunt on the Columbia, we believed. We arrived there early in the afternoon and were stung again. Two men prospecting for gold at the mouth of this creek informed us that a party of two were up on the creek slides hunting and trapping bear and had been there for a week. As the slides were too limited for two parties to work at once, we called off all bear dates.

We had now been out a month and were on the last lap of the river trip, being about sixty miles from Revelstoke, with considerable portaging to do and a number of rapids to run if the water was not too high. We received our first scare at Gordon Rapids. Here Phil Esswein pointed out to us the place where he had struck a rock the year previous. In attempting to run the rapids, his canoe struck and was literally broken in two. He lost his season's trapping, about $700 worth of furs, a Winchester rifle, and narrowly escaped with his life. The water was rolling high when we arrived here, but we decided that we could run the rapids with the big canoe. We gave her all possible speed and went thru, but the waves were so high we took so much water that the boat could barely float. We called back to Gilfillan not to attempt it with the little canoe, but they had drifted down so close to the rapids it was too late to get to shore or upstream. There was no alternative; they were compelled to run the rapids. It was a mighty close call for them. Their canoe just missed an immense rock, struck a big wave sideways that almost upset them, and finally landed in an eddy where the water fairly boiled. The little canoe, with its bow two feet out of water, whirled like a top. Phil and Gilfillan, who were straining to the utmost to get control of the canoe, finally succeeded and pulled to shore. We immediately passed resolutions that we would portage or line any further rapids.

Later that day we ran as far as Death Rapids, where we camped and

DEATH RAPIDS IN THE COLUMBIA.

prepared to do the portage stunt. In the morning we found the river so high it was impossible to get footing to line an empty canoe thru the rapids. The banks being sheer walls of rock, we had to cut a trail up the mountain side and carry the canoes and our load for about four hundred yards. It took us ten hours to make this portage and we were very content to camp for the night. The next forenoon we reached Revelstoke Cañon, stopped to look it over, and decided that it would be insanity and suicide to attempt a canoe in such wild water. The river was very fast and treacherous for the balance of the way to Revelstoke, only about eight miles, so we concluded that we had better leave our outfit with surveyors who were camping at this point and use shoe leather for the remainder of the trip. We arrived at Revelstoke at 9 in the evening, having completed a journey of 250 miles by canoe. We sent for our luggage the following day, and were soon viewing the scenery along our homeward way from the observation car.

WHERE FOREST GROWTH IS BEING ESTABLISHED IN THE TRACK OF MELTED GLACIERS.

NATURE'S PLAN IN RELATION TO OUR FAUNA AND FIRMA

A natural history treatise by a mountaineer, trapper and hunter, who writes of his views from personal observation and study in the wilderness covering a life-time period.

A. C. ROWELL

It has often been said that there is no waste in nature, and it is probable that a great many people recognize that everything in nature has a definite place and influences other things in some way or other. Many of our laws recognize the influence that certain things in nature have on the welfare of man, and it seems to be dimly seen that this influence may come to man indirectly, or through the effect that a certain thing may have on other things that effect man's welfare.

In the following pages I will attempt to show that everything in nature is a part of a perfect scheme, or plan, and will try to show how one thing influences another in a way that makes each individual part of the plan to influence all of the other parts.

By persons that ignore or deny nature's plan, man is claimed to be the chief factor among created things, and all other things are claimed to have been created for the use of man or to influence man. There is nothing in existence, outside of the human mind, to support this claim, and there is everything in nature to indicate that man is neither more nor less than a part of the

plan of nature. Just as we everywhere find one part of this plan displacing some other part, as conditions change, we find man displacing other parts. In the case of man we find the matter more complicated than in any other case, and this is because man has outstripped his controlling influences and increased to a point that causes unnatural crowding. This crowding has caused man to hasten to displace things that are not in his way, and that he is not yet ready to take the place of. Thus, while man is part of a perfect plan, he may for a time throw that plan out of balance. But in the very act of throwing the plan out of balance he will bring influences to bear that will act on himself and force him to restore the balance.

Proof of this is illustrated in many ways, but is plainest in cases where man has exterminated carnivora, and then found himself in competition with the increasing prey of the animals that he exterminated. Where man is really ready to displace the carnivora and use their prey, or destroy it by tilling the soil, it is natural displacement for him to destroy the carnivora. But where man destroys the carnivora before he is ready to take their place it is unnatural displacement, and throws nature's plan out of balance.

The most important thing in this plan is to keep its parts evenly balanced, and could man displace all other living things, and yet not disturb the balance, there is nothing in the plan to prevent him from so doing. It is probable that in time man will be able to displace many of the animals that have places in nature's plan, and displace the forests with other vegetation. But at present he can not do it, and should he continue to ignore the demands that his own great increase is making on nature and recklessly use and destroy the forests and all that they contain, as roving bands of savages were able to do, he can not maintain his advanced position and continue to increase.

War and disease control the increase of men to some extent, but the real control is exerted by the food supply. And the food supply is influenced by almost everything that man comes in contact with, so that when he burns a forest or wastes an animal he indirectly reduces his food supply and curtails his power to increase.

While small wastes only interfere with increasing and cause want, large wastes may cause great decrease, and it is probable that every famine is the result, either direct or indirect, of former acts of the race. To use natural resources without regard to a future supply tends to increase to a point that can not be maintained and that is almost certain to result in war, famine or pestilence. Whatever the result, it is the effect of throwing nature's plan out of balance and the decrease that it causes is one of the things that go towards restoring order.

Through superior intelligence man should be able to displace everything that he can not use, and to use everything that is required to keep a balance. When he accomplishes this, nature will keep an almost perfect balance, and man's place will be enlarged to its greatest possible extent.

Nearly all political ills, war, famine and pestilence may be traced to man's abusing or neglecting natural conditions that he has the power to influence for or against his own good. When care and study take the place of haste and guess work, man will take advantage of natural conditions, and not use them blindly to his hurt. Intelligent breeding, rather than war and famine, will control the increase of the race, and there will be no unnatural crowding and no pestilence.

In the case of man it is hardly worth while to go to great length to show his place in nature's plan, because in showing the places of other things in nature man's place will become apparent. But, to make the matter plain, I will mention that man's part is to control or greatly influence many of the other parts: Savages prey upon those animals that outstrip their other controlling influences and become too numer-

A SAMPLE OF FOREST PRESERVATION.
Living forest that has been perfected by thousands of forest generations.

ous for the general good. Civilized man domesticates animals and plants, so that he can control them, and causes them to displace other animals and plants that he can not control. He drains swamps, irrigates deserts, plants forests and digs the landscape full of holes. So long as man was savage his place was no more than that of the wolf, and he could not outstrip his controlling influences and displace other things in nature. His weapons would not permit him to kill game in excess of his needs, he could not kindle a fire carelessly, and his own immediate safety forbade promiscuous burning of the forests. He had no tools with which to cut the forests down, and there was nothing to induce him to plant forests or irrigate deserts.

Before attempting to show the use that nature makes of different things and the relation that they bear to each other, it will be well to note that the only apparent importance of anything is relative and comparative. And that, for this reason, we can make no estimate of the importance of nature's plan, except as the different parts are important to the whole. If any one can find out why nature is, and why the universe, that person can, no doubt, tell why nature worked through countless ages to prepare the earth to support its many forms of life, and why nature uses these forms to increase the earth's capacity to support life.

If all the soil on the earth were in one place, and all the water in another place, there could be little life on the earth, so that the more evenly the soil and the water is distributed over the earth's surface the more life the earth will support. The forests and the unevenness of the earth's surface are the chief factors in keeping the soil and the water distributed, and the forests and the water are the chief factors in building soil.

In the so-called deserts of North America there is much soil and very little water. The soil that composes the surface of much of the desert was originally deposited in either the sea or large lakes, in the form of silt, and was afterwards brought to its present altitude by the changing, or contracting, of the earth's surface.

This soil is of good quality, and, were there no proof to the contrary, we might suppose that it had been formed entirely by the erosion of primary rocks, but in it there is an abundance of petrified logs, leaves and plants, as well as fossil fishes, shells and animals. So, without a doubt, vegetable and animal life took part in forming the soil of the American deserts. In the sedimentary rocks, that make excellent soil when decomposed, we find all manner of fossils to prove that animal and vegetable life took part in giving them their quality. New glacial deposits that are formed entirely of eroded primitive rocks support scant

vegetation, and require many generations of forest to give them a coat of soil rich enough to support a heavy forest or other luxuriant growth.

On a rocky, barren slope we find a few scattering trees that are so dwarfed and scrubby that they are nothing more than deformed shrubs. They appear to be of no value, and we think that the landscape would look better without them, but they are the first stage in the formation of a forest. Each one of them draws the elements of soil from the air and the water and the decomposed rock, and by depositing its leaves through its life, and then decaying, it forms a spot of soil. In this spot of soil another tree will take root and make a better growth and more soil than the first. As the soil is extended over and among the rocks by succeeding generations of trees, other vegetation gets a start and helps the trees to build and hold soil.

Every leaf and every tuft of grass that finds lodgement in the crevices of the rocks adds to the form of matter that was not present when the trees first took possession of the place. The process is slow, but by it nature not only covers the mountains with a blanket of soil, and luxurious forests, but has also formed the great depth of rich soil that covers the wide valleys of the earth, and that makes it possible for animal life to be so abundant. Even the abundance of life that is in the sea owes its existence, primarily, to soil that was formed out of the sea. Even if it be true, as some scientists tell us, that life originated in the water, this still holds good, because it could be only an extremely low form of life that could exist in the water before there was any organic matter, and even this would probably exist on earthly slimes or mineral substances that originated out of the water. To follow the forming of a forest thru all of its stages, from the time the first tree takes possession of a rocky, flood-swept barren, to the time that the barren is changed into a deep-rooted forest that controls floods and abounds in springs and brooks, would be interesting. But this great change is not brought about by the forests unaided, and in treating of other things, that aid the forests, the work of the forests and the way that they are formed will be clearly set forth.

In order to support the greatest pos-

FIRE-KILLED SPRUCE FOREST THAT IS BEING REPLACED BY PINE.

sible amount of life of all forms, nature uses methods that are abhorrent to man, but this has to do only with the human mind, and is evidence against the quality of human intellect rather than against the methods of nature, so that we can inquire only as to the result without questioning the method.

There are some things in nature that we are almost tempted to class as experiments, or accidents, but whether we understand it or not, they are of some use: A Dutchman trekked from Iowa to New Mexico; he took his family, his plows and his cattle with him, and while looking about for a suitable location for a homestead he kept his calves tied up in order to have milk from the cows. The calves had to be fed, of course, and to feed them the Dutchman's children pulled weeds and grass from the hills. Much loco was in the place, and in pulling it the roots came with the tops, the calves ate roots, tops and all, with the result that they went "loco" and died. The things that the Dutchman said could not be understood, not even by another Dutchman, but, no matter what they meant, the case illustrated that loco might be used by nature to prevent an emigrating species from unduly crowding native species. Native animals are not harmed by poison weed that is native, and it is only when either the weed or the animal is introduced to new territory that harm results. Loco is the choice food of mountain sheep, and, it being a variety of pea, domestic sheep eat it readily. The mountain sheep thrive on it and become fat on its seeds, but domestic sheep die by the thousand from the effects of eating it. Horses and cattle are often killed by loco, but it is harmless to elk, deer and antelope. Whether it be by accident or otherwise that loco kills introduced species, it is a form of vegetable life that thrives under a great variety of climates, and never fails to make a food supply for animals that depend on it; grass may fail in a dry season, but the loco will bloom. Loco is becoming too abundant, and is crowding out other forms over large areas of territory; this is the result of man's interfering with nature by killing native animals to waste and without regard to a continuous supply. Where mountain sheep were formerly found in bands of

A. C. ROWELL AT HIS HOME CAMP.

thousands, and kept the loco well within bounds by eating the seed-pods, both green and ripe, there are now only a few scattering bands of ten or twenty, and the loco has increased till they have no effect on it. It is the same on the range of other native animals, except in places where domestic animals have been overcrowded. We need not go further with loco, and with other poison weeds we may be sure that they are used by nature in much the same way that loco is used, or else that they fill a place not occupied by anything else and too limited in area to allow them to crowd anything else.

With weeds that are not poison, but that we object to because they crowd out other forms, we can settle with most of them by dealing with the dandelion. In distributing its seeds the dandelion has the advantage over most all other plants, but its growth consists of only a few soft leaves and a short seed stalk. Domestic animals care little for it, and it often bears seeds in meadows where the grass is kept cropped close to the ground. Deer, bears, porcupines and beavers are fond of dandelion, and when they were numerous enough to fill their places in nature they controlled the dandelion so well that it was not conspicuous. Now there are thousands of acres in a place where the dandelion has plugged the ground so full of its whiplash roots that nothing else can grow; the dandelion is all right, but domestic animals can not displace native animals in controlling it, and the same is true of many other plants.

Under an intelligent system of handling natural resources man would allow native animals to exist in numbers sufficient to control their food supply, and would take only the surplus increase each year. Under this system the animals would yield a great and continuous food supply to man, and would, at the same time, cause a more abundant growth of the forms of vegetation that are food for domestic animals. Man may kill ten deer out of a hundred each year for ten years and have more than the hundred left, or he may killed the hundred the first year, waste ninety of them, go hungry the other nine years and have nothing left. This last method has been steadily aimed at in America since the first white man landed in the country, and only the size and character of the wilderness has prevented it from being carried out.

(TO BE CONCLUDED.)

THE CALL OF THE WOODS.

There's a touch of frost in the morning breeze, a haze on the distant hills;
There's a murmur of yellow autumn leaves, with a tang in the air that thrills.
There's a silent call to be up and away, and a fervent, deep desire
For the smell of the woods at break of day, and the smoke from the evening fire.
O! for a breath of the spicy air that comes from the pines at dawn!
And the silence calm, like a soul in prayer, when the sun's last ray is gone!
And tho I should live a thousand lives, with all the gold that shines,
My soul would be in the hills I love, by the streams and the crooning pines.

WM. GEORGE GARDNER.

AN OLD-TIME TURKEY SHOOT

CAPT. CHAS. JOHNSON

Some years ago, while on the road in the interest of the firm with which I am connected, I had one firm to call on in the province of Quebec that I generally arranged to reach on Saturday and spend the week-end with. Their place of business was about seven miles from the main line of the Grand Trunk. There were two brothers, both single men, who lived on the old homestead with their mother and sisters, and besides carrying on their business they owned and worked a large farm. They were both sportsmen, members of the local curling and shooting clubs, kept two good foxhounds and always had a good bird dog, and as my visits were usually in October, there was always something doing about the time I arrived.

I would let them know ahead and take the Saturday morning train from Montreal to their nearest station, get a horse from the livery and drive out, generally getting there about 10:30. An early dinner and a hunt would be the usual order of business. One Saturday morning I drove out to the house and found that the boys had gone to a turkey shoot about six miles away, and had left word with their mother to tell me to come along, too. The old lady gave me the directions, and just before noon I pulled up at the farm where I found the brothers and their hired man and about a dozen more young men. They had all the arrangements made for the shoot to start after dinner. My horse was taken care of by the farmer's son, and then the call for dinner. We filed into the house, where we found the table set in the kitchen, a big home-like room. The farmer's wife and two daughters waited on us—and such a dinner! There was corned beef and pork, roast lamb, cabbage and vegetables with lots of pumpkin and apple pie—and a fine sociable crowd to enjoy it.

After dinner they began the "shoots." Ten men put in 10 cents each for a turkey. The distance was 200 yards. The target was a barrel head nailed to a post with a fresh paper target for each bird. The shooter getting nearest to the center of the target won the turkey. They were using the Martini military rifle and had an old-fashioned "shaving horse" with a bag of oats across the head for a rest. Sitting on the seat of the horse this gave almost as good a rest as if in a vice.

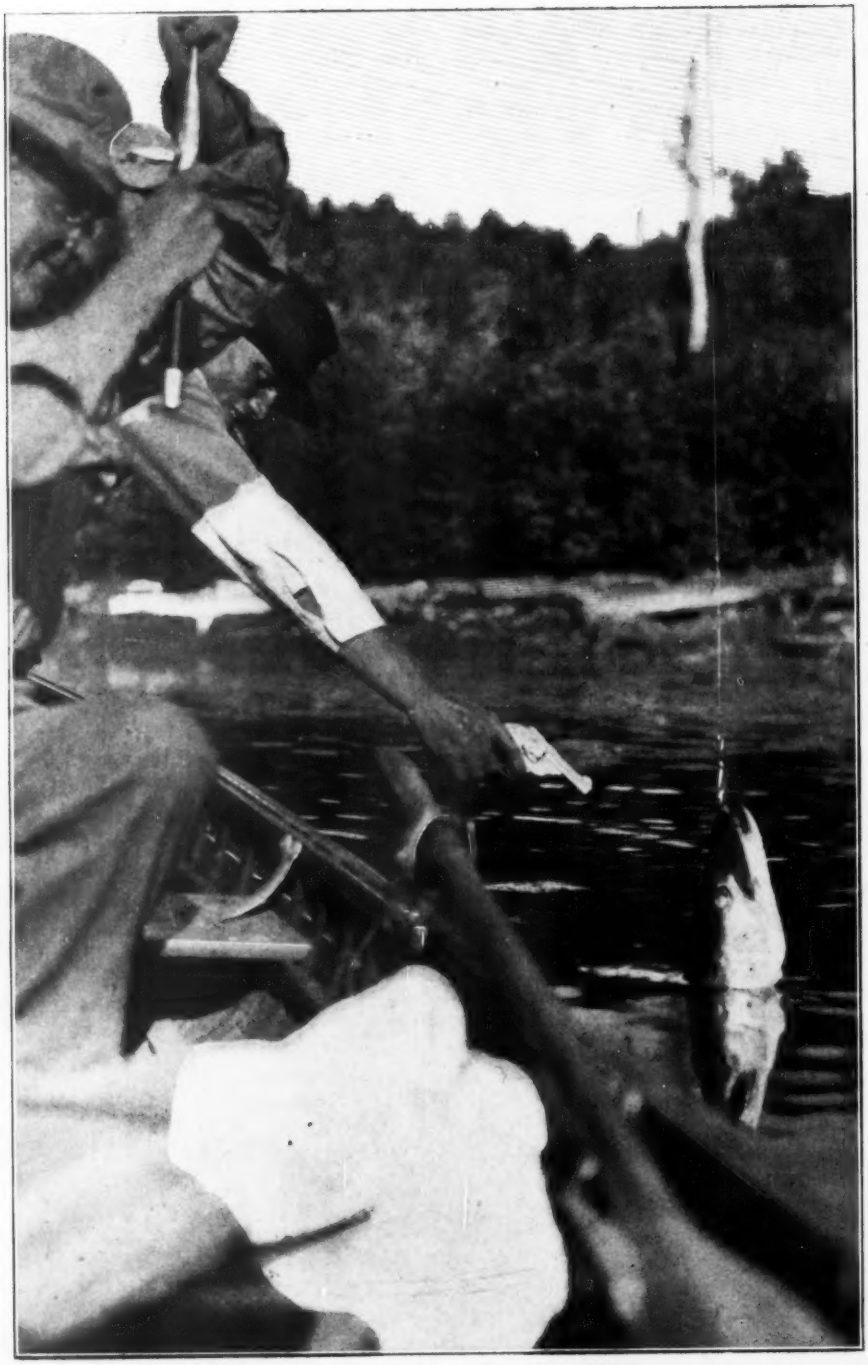
I watched them shoot off the first two birds, and some of them made very close shots. The marker would mark the number of each shot—from one to ten—on the target; then it was brought in when the ten had fired, and the winner named. Jim, the elder brother, was captain of the local rifle club, and most of the shooters were members of the club, and had shot at the range in Ottawa for several seasons. After the second bird was shot off he asked me if I wanted to come in. As I had had my dinner and had been well used, I thought it was as little as I could do to contribute a few dimes, never for a minute thinking of winning a bird, as, altho I had shot lots of game with a sporting rifle, I had never fired a Martini, nor practiced target shooting. When the target came in I found that I had the line but was low, and it just struck me that being used to a fine sight on my Winchester, I had taken too fine a bead in the heavier sight of the Martini. So I took a little coarser next time and got up a little nearer, still holding in line. I was third on this bird, Jim winning it.

Next shot I took it a little coarser and got the bird. By the time I had shot for my seventh bird I had three,

and as that was the limit for any one shooter, I had to stop. I guess some of them thought I was a crack shot, and hardly believed me when I said I had never shot a Martini.

During the afternoon they shot off fourteen turkeys. Jim got the last one, making three for him. His brother, Emmet, got one and with my three we had seven out of the fourteen. We all gathered in the house for supper, which to use the usual phrase, was a bountiful repast. The shooting was all gone over, and another shoot arranged for at my customers on the next Saturday. After supper there were fourteen tickets numbered from 1 to 14 put in a hat. One of the girls, blindfolded, drew them out and gave each of the winners as many tickets as they had won birds. Then with a lantern we adjourned to the threshing floor in the barn where the birds seemed solemnly waiting for us, each with a numbered ticket attached to his neck. Each man called out the number he had drawn and the farmer hunted out a turkey with a corresponding number. I got two ordinary-sized turkeys and the biggest gobbler in the lot. We tied their legs together and put them in the double-seated wagon that the boys drove over in. Jim went with me, and the other two went with the birds. It was a frosty October night, and we were not long covering the distance home. Soon the others drove up and we went out with a lantern to help get in the birds, when we found that my big gobbler had tumbled out. After housing the others, Emmet, the younger brother, and the hired man started back with a lantern on each side of the wagon to look for the turkey, and had to go nearly back to the farm before they found him on the side of the road. As I had no use for the birds, I gave them to the boys for the next Saturday shoots. Jim said that was the third time that same gobbler had been shot for that fall—and by Christmas he would hardly know who would eat him.

That happened more years ago than I would like to admit. The "boys" as well as myself are getting grey and the hair thin over our temples. I still keep up my rifle shooting and manage to get a deer or two—and occasionally a moose every season. I often wonder how many of that fine crowd of young men are living—and what they are doing. My friend Jim now goes to Ottawa—not to shoot at the range—but as a member of Parliament to help make our laws, but I think if he would own up, he would admit that there is more real pleasure in an old-time turkey shoot than sitting in the Parliament of Canada listening to some long-winded politician making a speech for the benefit of his town paper towards his next election.



ANNIHILATION.

THE RUN OF THE DEMON GREY

ROBERT PAGE LINCOLN

You work out, say, some morning from Redondo Beach, Calif., in a sea-going fisherman's craft with the idea of an all-day tour in quest of albicore and yellowtail in the neighborhood of San Clemente and Santa Catalina islands. It is all very rare sport. You will sit there in the back of the boat, hugging your rod while the engine chugs away, and there is always the intimation that sooner or later your bone-constructed minnow upon your line is going to be hit and there is going to be a fight on. The owner and guardian of your boat cuts up sardines for bait and casts them, at intervals, overboard —that is, providing no strike is had at the hook. All very well. And some time later something with the impetus of a whale takes that lure and the reel spits out an angry tune, while the leather thumb-pad sinks upon the cored line to hold him in. You will then be fighting a yellowtail that may have twenty pounds to his credit. *All very well!*

Some sunshiny day you take upon yourself the thought that you would like a try at shark fishing off of Cayo Hueso of the Florida Keys, and you steam out, say, to the rocks, and there you sink your offal bait. You grace yourself with a stout old Murphy hickory rod of eminent, durable, pugnacious proportions; and what with a thirty-six thread line you feel more than ever confident that, come a large killer fish, he will be yours and no mistake. Looms now across the waters a shadow, grim and ominous. It parades by, its silhouette upon the transparent sands. Suddenly your bait is taken, and with a stout jerk you set and re-set the hook in that capacious maw. Then as he darts wildly, blindly, away seaward, you jump into the dinghy—and the fight is on. Seven feet in size he will go; and thirty minutes later your large-calibred revolver cracks and a ball crashes thru the black killer's skull. *All very well!*

Up there in Banana River, hard by the Atlantic, in Florida, you sink your hook, baited with mullet, and out of those grim depths there will come a wonder-arousing tug at your line. You wait a trifle. You then feel assured. You set your hook and say, now, perhaps, it may be an eighteen-pound channel bass. There will follow a fight that may have the most spectacular features to its credit. Out there he makes an arc; a dart landward; a curving flight and then he tries to get under the boat, but by careful ingenuity and the liberal use of your wits you foil him. A half hour later he is gaffed, and you gloat over your prize. *All very well!*

But say now—perhaps it is some cooling morning, 200 miles from civilization, upon the waters of Lake Manitou, in western Ontario. You will try for the lordly maskinonge (*Esox nobilor*), he of the fresh-water fighting fame. We will scorn the use of that heavy tackle. It will be a Bristol rod, a sixteen-pound-test line, a hundred-yard reel and a lot of grit and shrewdness behind your eyes. As your partner paddles out, you let your line out from fifty to seventy-five feet. At the end of it there twirls a dashing No. 5 Skinner spoon with brilliant strips of red flannel connected to it. It is positively a lure on a par with the most high eminent. Over there, just in from that point of land yesterday, we saw that great shape there in that sparkling, mirror-like water. We knew that he was wont to run sentinel duty off of that point and now, in the early morning, we are after him and our hearts half fail us as we steal lightly and soundlessly over the surface. No sound breaks the stillness of a wilderness morning. High overhead the blue dome of the heavens; around the shores the

EXPECTATION.

greenery of a still surviving forest; and darkly shadowed here and there where the sun's penetrating rays have not entered. Like a great globe now it is hanging suspended over the bewitching horizon.

Into that bay, off of that out-jutting point—a few strokes of the paddle and the lisp of the water drops falling from it, and the rise and fall of the line in the water.

Then—*twang!* A moment—a feeling pull at the flannel; a moment of heart-palpitating hesitation. *A lunge.* He has it! With a thrill you jerk high the rod tip, and the hooks you filed excessively sharp that last evening run keenly thru the lip of the mighty, and the fight bears down upon you.

The line runs taut. The steel rod bends almost double. The line whirrs out of the reel. *Easy there;* the line is light and the paddler pushes the canoe inward to stop the great, titanic rush. He is a mighty fish indeed—a corpulent, cool-water-nurtured frame of breath-taking proportions. There he goes in a wide, circling arc. He will break loose sure—but no, you are after him, gently, but insistently, impelling him inward with the reel. Foot by foot and the nose of the canoe follows with the trained eye of experience. He makes another run now, and that with vengeance, fairly blading the water with the thin leash. You wisely let out line!

In those great rushes he will eventually worry himself out and then shortly will come the moment, after a long and arduous siege, that you will have him up close to the craft and scorning gaff or net you shoot him with the short-barreled Stevens pistol. There you will have taken him on light tackle as tackle goes. And there is a thrill to every move he makes. He is not a sluggish fellow—is *Esox nobilor.* Bred there in icy cold water there is a flash and even deliberation to his movements, and like as not, be you not trained, he will get the better of you and snap that line off like a cotton thread. This providing he go thirty to forty pounds. That indeed is a fish to conjure with!

Among our fresh-water fishes the maskinonge, or muscallonge, as it is sometimes termed, is a figure of great prominence, with a great number of the angling fraternity, and if we are to go by size, then the respectability of his dour proportions should win for himself the term of king. *Esox nobilor* is rightly-termed—maskinonge. The first part of the name, *mas,* means great, in the Algonquin language, and *kinonge* stands for pike or pickerel. Set together we have maskinonge, or great pike. The first name allotted this fish was masque-allonge, or *masque allonge,* meaning, in the French-Canadian, long snout, or face. But in Canada today the first-mentioned term holds good. In the states we call it, out and out, muscallonge, regardless of scientific or traditional features.

Exact identification of the muscallonge is often wanting and among many

people great confusion on the point reigns. A large common pickerel of eighteen pounds being taken, it will instantly by some be termed a muscallonge. Or a great northern pike, of husky frame, brought in, will also be dubbed "musky." The fact of the matter is that the great northern pike is one individual; the pickerel or pickerels another class, and the muscallonge, in itself, an apart individual. To the unobserving, pike and muskies may not be told apart. Yet to one who has studied them the difference can be noted at a great distance were the test to be put. Coloration in these various fishes is apt to be confusedly changeable. In one part of the country they may have a darker tinge to their coat; in yet another part considerably lighter hue. The color scheme of the pike is made up of shifting green, with spottings, light in shade. The musky is grey, deep in tone at times, with spottings that are of a notable dark coloration. As a swift means of identification a glance at the cheeks of your fish will tell its kind. The upper part of a musky's cheek is scaled; the upper part only. A pike has scales both up and down.

Trolling for the musky is about the most well-known and followed method of catching the creature. Now and then you will have an opportunity to cast for them, and this treat was my good fortune last summer out from Park Rapids in northern Minnesota. We had run off of some shoals with the boat; close in it was very low, yet there was formed what might be called a step-off. God only knows how deep it was below us. Along this step-off the big fellows kept themselves. As a matter of fact I noted a suspicious swirl in the water at our coming in.

I had a few very treasured baits in my possession. Some lively green frogs, to be exact. To the fisherman, in the North, these are sometimes worth their weight in gold. I hooked one on and made a cast. There was no disturbance. I cast again, farther ahead of me this time, and barely had I started the winch to turning than I had a great strike. I set the hook into the jaws of *a large fish*. But—*shucks!* I lost the fish!

Muscallonge are taken best naturally in and around their feeding grounds. One will do well to troll his lure just outside of the weed beds yet close enough to them, however, without becoming snagged. In small bays, especially at the outlets, or inlets, of a lake, they are liable to be found; and off of juttings of land, or peninsulas. If one is able to locate certain sandbars that run often thru the center of some of our lakes, there he will find not only the muskies but all of the other fish. They cling along these sides as a set rule.

Bright and early in the morning is the best time for them. Late in the

EXULTATION.

afternoon is another good time. The season of the year is another question to debate. Thruout the month of

A BIG ONE.
Papa's best girl and a 22½-lb. Musky caught in Big Sand Lake, Minn.

June, in our northern states, and in Canada, you will get them readily where in other months you will fail. July and August are poor in comparison, in fact, not to be mentioned. But in September and in October the sport again brightens and many a solid warrior will rise to smash your barb.

The spoon hook is a creation that appeals inordinately to the muscallonge.

Your pickerel and pike may take the spoon with avidity but it is as nothing compared with the attention accorded it by this greater preying fish. The general color scheme and whirling perspicuities arouse their spirit of innate fight. Your Skinner spoon is a thing to conjure with. Need I mention it? Hardly. Just why I can troll three or four other spoons out along with the Skinner and score most with the said spoon is more than I can, or will, try to puzzle out. Yet it is a fact. However, to set any lure down as final is hammering in a stern enough dictation. Include some of the copper-plated Hildebrandts spoons, for instance, and a tandem nickel-plated Jamison. The No. 7 Hildebrandt is a good lure, which number should be laid neatly away in the highly useful tackle box.

Red has a peculiar way of arousing the ire of the *esox* tribe. It is like waving scarlet in front of a depredating bull or a covey of strutting turkeys. Likewise you catch bull-frogs in the summer on a No. 14 hook, with a bit of red to it. Likewise on your spoonhook you use strippings of red flannel, and you get the devastating tiger fish. Try a four-and-three-quarters Skinner with

SUNSET IN MUSKY-LAND.

these weird trailings and witness the result.

Bamboo makes for a fine rod material for use in musky fishing; and if it is light, but durable, it is just the thing I would suggest. However, I combine my No. 33 Bristol steel rod as both a musky rod and a bait casting bass rod. The lighter your tackle, the more exhilarating the sport, but the longer you must fight your fish.

Fifty yards is a great deal of line to use, but not if you have light tackle, for then you have to feed out a great deal of it. If your tackle is desired heavy, use a Cuttyhunk line. A Jamison No. 2, twenty-four pound test bait line, will go good for your lighter tackle, or lighter yet the No. 4 Jamison special patent braided silk line, sixteen pound test. A heavy Jamison muscallonge, trolling line No. 1 will serve you well for a large fish, if you wish to take no chances. See that your line has *quality*—and a lot of it!

Preferably, use a long-barreled reel, so that you will have quite a bit of room to spool your line, also to avoid snarling. A one hundred yard size is the best. It should have a strong drag and click.

A clincher gaff with which to seize your catch when it is near the boat is eminently desirable. Or better yet, procure the aforementioned, most highly useful and desirable Stevens pistol. The best little arm ever put upon the market.

File your hooks well. The sharper the better!

THE BASS.

To angle for black bass I would advise thoughtful sportsmen to carefully select waters in which this noble game fish can be found. I spent four days, once, fishing for black bass in an Orange County lake about which I had been lied to by a mercenary person who kept a boarding house and let boats on the premises. I caught two eels the first day, one eel the second day, a small paralytic sunfish the third day. The fourth day I caught nothing at all; but on the fifth day I caught a large, fine express train for New York.—Henry Guy Carleton in the Wm. Mills Book.

FUR FARMING POSSIBILITIES OF THE FUTURE

ROBERT LEWIS

The condition produced by the war has made the present a most desirable time for embarking in this business. The facts herein published were gathered from personal observations covering fourteen years' experience in trapping and fur-farming, including an extended service as feeder on the Government mink farm at Pritchard, Idaho.

The effect of the war on the fur trade is tremendous. Europe before the war was the manufacturing center of the world for raw fur. The most of the catches from the remote countries of the globe finally found their way to European shores. There they were made into garments of different kinds, later to be shipped back to the consumer; consequently when the news was spread that war had broken out between the several different nations of Europe the fur trade was one among the first to be paralyzed. In times of war all industries are more or less shaken by the lack of confidence existing between the different factions not engaged. No one cares to put money into any product that has not got a ready sale at a good profit. A business has to have a solid foundation to stand up in such times; if it is not a product used directly or indirectly with the war. Therefore, fur garments of all kinds, being more of a luxury than a necessity, have caused the business to suffer a temporary decline.

The one most affected by this great war must undoubtedly be the trapper. He braves privation, cold and hunger and in many cases death, to eke out a living by snaring and trapping the furbearers for their skins. Like the toolmaker, which is told about in the Bible story, who was entitled to the seat of honor on account of being the most useful member of all who took part in building the great temple because the other trades couldn't exist without him, so is the trapper in the fur business. While it is true that there are others who will lose more money than the trapper, nevertheless, he will be the one that will suffer the most. There are thousands of trappers scattered over the different countries of the globe who make their living by hunting and trapping. These poor fellows are the ones who will have to bear the brunt of hard times caused by the decline in price of furs. They have to find something else to do until the prices of fur go up enough to justify them to start trapping again. Consequently, after considering the situation from a financial standpoint, trappers in all parts of the world will be forced to quit trapping on account of low prices.

This will give the furbearers a chance to multiply and become more plentiful in places where they are getting scarce, which is practically the whole country. Where they are not disturbed by traps and dogs they are less shy and will be easier to capture alive for breeding purposes. If the fur farmer who wants to get started as cheaply as possible will take advantage of this and stock his farm now, he will find himself in the lead when the war is over. While the trapper will suffer a loss on account of existing conditions, the fur farmer should be greatly benefited. The cause is not hard to find if one will consider the high cost of breeding stock before the war. This was nearly always twice the fur value for ordinary "wild" animals, while those raised on a ranch are much higher priced. Taking these facts into consideration, it looks as though the war is one of the most helpful things that could have happened to cause the furbearers to be added to our list of domesticated animals. Now people who want to go into the business can do so without spending

a fortune to start with. That will enable hunters, trappers and lovers of outdoor life to engage in a paying as well as interesting business of their own, which was impossible a year ago.

In the Northwest and especially in the Inland Empire, there are many pretty little mountain streams, around which would be an ideal place to start a fur farm. These little streams flow over a series of falls in most places, to finally empty into some creek, lake or river. From the electrical energy which could be generated from these falls, the fur farmer could light his home and use the power for various purposes around the farm. Besides the power, he could, by only a very small expense install a water system and have running water in the house, barn and any other place on the fur farm. Near where these streams flow into the lake or river, there is usually some timbered bench-land or flats covered with pine, cedar, white and red fir, that would afford excellent shade for the animals. These flats contain from one acre to sometimes a hundred or more acres of land and make a nice building place for both home and fur ranch. The timber has all been cut off the land that is of any value, but the small trees are quite bushy and make a good shade.

If a fellow will start a fur farm in this country, where the climate and natural conditions are suitable, in only a few years he will be receiving fabulous sums of money for his labor. You ask why? I will try and explain in as few words as possible some of the main reasons.

Until the last year or two fur has been plentiful in nearly every State in the Union. Thousands of men and boys all over the country were induced to trap the furbearers for their skins on account of high prices offered for said skins. Every known means was employed by the trapper to accomplish his ends and nothing suited him better than to have his picture taken showing his winter catch of fur for a background. The bigger the catch, the more money he had.

In the meantime civilization was spreading at a terrific rate and always just ahead was the pioneer trapper, later followed by the amateur as the country became more settled, until the swamps and woodlands contained a mass of steel traps from coast to coast. There was no place for the furbearers to go, therefore, they were in the same predicament of the "country" dog that came to town. The prices kept on getting higher and higher and that lured more trappers to try their luck, while those already experienced redoubled their efforts until today the furbearers are almost a thing of the past in localities where they were once quite plentiful. Then fellows who could see ahead that fur farming would pay, went to work, to the horror of their neighbors, fencing up ponds for muskrats, catching skunks, etc. Some people thought they were crazy. Of course, the higher priced fur attracted attention and companies were formed with a capital of several thousand dollars to raise the silver and black fox. These farms were paying big dividends before the war and are no doubt holding their own now while prices are down, as the upkeep of the farms is comparatively small. It is lack of information on the subject by the public in general, which is the main cause of fur farming to be no farther advanced than it is. The average person thinks it some kind of a fad for cranks, not realizing that it is a new industry just springing up that will make fortunes for the pioneers in the business.

All over the country lakes, sloughs, ponds and swamps are being drained and cleared of brush to make room for the cottage and up-to-date farm of the progressive grain or stock farmer. These swamps and wooded places was where the furbearers originally got their supply of food in the way of fish, crawfish, frogs and small birds. The clearing away and draining of these places has destroyed the source of their food supply; consequently, the furbearers were forced to move on to other less settled places or become the prey of

man with his dogs and guns and other devices for their destruction.

Having sketched out the former source of supply of fur, I will now try and give you some idea of the demand for it. If you will notice, almost every lady you meet on the streets in any city in the United States or Canada, during the winter months, wears an article or garment made from the skins of some furbearing animal. Whether it be a scarf, muff or furlined coat, the exceptions to this are very few, if she is financially able to buy them. The skins from which these luxuries of winter wear are made were originally bought from the thousands of trappers, scattered thruout the country who made a business of catching the furbearers for their fur. The disappearance of the places formerly frequented by the sly furbearers in search of food has caused the supply of fur to diminish very fast in the last few years. On the other hand, there was a howl from the public in the way of high prices offered for fur. This, however, stopped when war was declared and many are wearing their last year's set of furs and dealers are selling made-up furs at a sacrifice. If the war hadn't broken out when it did fur prices would have gone higher the past season than was ever known before. Big crops and good times are what cause people to purchase furs, and as soon as peace is declared we may expect an abnormal boom in the prices of fur.

Fashion each year is demanding fur in increasing quantities, and will continue to demand it for many years to come, and the supply is diminishing to the extent that furbearers seem destined to suffer the fate of the wild pigeons, which are forever extinct. Therefore, we must look to the fur farms for our future supply of fur or let science bring forth something to take its place in the fashions of today.

The time to start a fur farm is right now, so as to be able to reap a harvest of profits when the rush comes on, in place of standing around grieving because you had not started one.

The first thing to do after you have made up your mind to fur farm, is to get a suitable location for your farm, where there will be plenty of water and shade, and which will be handy to transportation either by railroad or river. It is not the object of fur farming to go back some place in the "jungles" and go "wild" like the rest of the animals, but rather to bring the animals out of the "jungles" so they will become useful to mankind. The next thing to do is to get all the books and information on the subject you can, so that you will not have to make any costly mistakes. These books can be procured from Outdoor Life.

Having mastered the subject well enough to proceed, the next thing will be to get suitable pens built to accommodate your breeding stock. These pens may be built out of different material and of various sizes to suit your ideas and pocketbook. However, one should exercise much care in this respect and build them strong enough to prevent the animals from breaking out, as this is one of the most dangerous things for the beginner, and should be guarded against. Fresh water should be kept running in the pens at all times, either as a small brook or artificial lake. A better method is to have the water piped into the pens and emptying into tubs or vats sunk into the ground deep enough to keep the water from freezing too easily in cold weather, and have the tubs sunk until the water-level will be about two inches below the surface of the ground. By having the feed pipes to come up out of the ground and flow over the side of the tub and have the overflow to go out under ground will keep the animals from digging, which would be the case if the ground was flooded. Don't make the mistake of fencing up some stream so as to have things "natural," for it is both expensive and foolish. The pens being built, our next step is to get breeding stock. If you have decided on mink, very well; that is a good choice and we will order a half dozen or so to get started. If your farm is located in a country where

mink is fairly plentiful, you can capture them alive yourself by using box traps; if not, it would be better to buy from someone who makes a business of catching them alive for breeding purposes. They will cost from $10.00 to $25.00 each, depending, of course, whether you select wild mink or those raised on a ranch. I would advise anyone to get ranch-raised mink if possible, as they are much easier handled by the beginner and they have a tendency to keep those which might be captured wild from wanting to break out. The mink by nature is exceedingly sly and cunning, sometimes doing things out of the ordinary, such as climbing fence posts, small trees, garden hose and any other objects that might be leaning against the fence. When the new mink arrive, be very careful to see that no such object is leaning against the side of the pens, by which they might climb out. Then empty the mink out of their shipping crate into the pens prepared for them. Be sure to put the females and males in different pens; if you don't the males are apt to fight the females, and, in fact, many valuable female mink have been lost by this one mistake.

Now you are ready to tell your neighbors about being a fur farmer, but under no circumstances let visitors handle any of the mink or come around the pens too often, for they don't like but one master at a time and are very shy of strangers. Mink will never be satisfied with their surroundings if there are any holes in the pens where they can see outside. They will dig, gnaw and worry as long as there is a possible chance for their escape. With this trouble done away with by using tight fence in place of net wire and with reasonable care and handling, they soon become as tame as house cats and will follow you around much the same at feeding time.

In going into the business of raising fur in the Northwest or any other place, don't depend on fur alone for the first year or two; but simply have it as a side line until you have gained enough knowledge to conduct your farm on a large scale. There are great opportunities in the fur business, especially with mink, marten and skunks, and there will no doubt be fortunes made from it, but this will be accomplished by the people who start right and improve on their methods until the fur-bearers are "wild" only in history.

Night on a Motor

No poetry in you? The voice of you singing,
In rhythm, in rhythm, the song of the road;
The wheels of you turning, untiring untiring,
No burden to you is the weight of your load!

A star crosses Heaven, you challenge its swiftness,
No night-bird will race with my beauty tonight!
There is naught but my fancy outstrips you—speed faster!
The wind whips the tears from me, blinding my sight.

A master mind thought you, a master hand made you,
No art is more wond'rous that's born of a brush;
Slide softly, my beauty, until, as I touch you—
Now, good road ahead! We're away with a rush!

No poetry in you? Keep singing, keep singing,
Speed on now and vanquish the stars in their flight!
Men call you machinery? No matter, my wonder;
Out here we shall live—you and I and the night.

ROBERT O. BALLOU.

SILVER KING, THE GREATEST OF POLAR BEARS, CAUGHT BY LASSO IN GREENLAND.

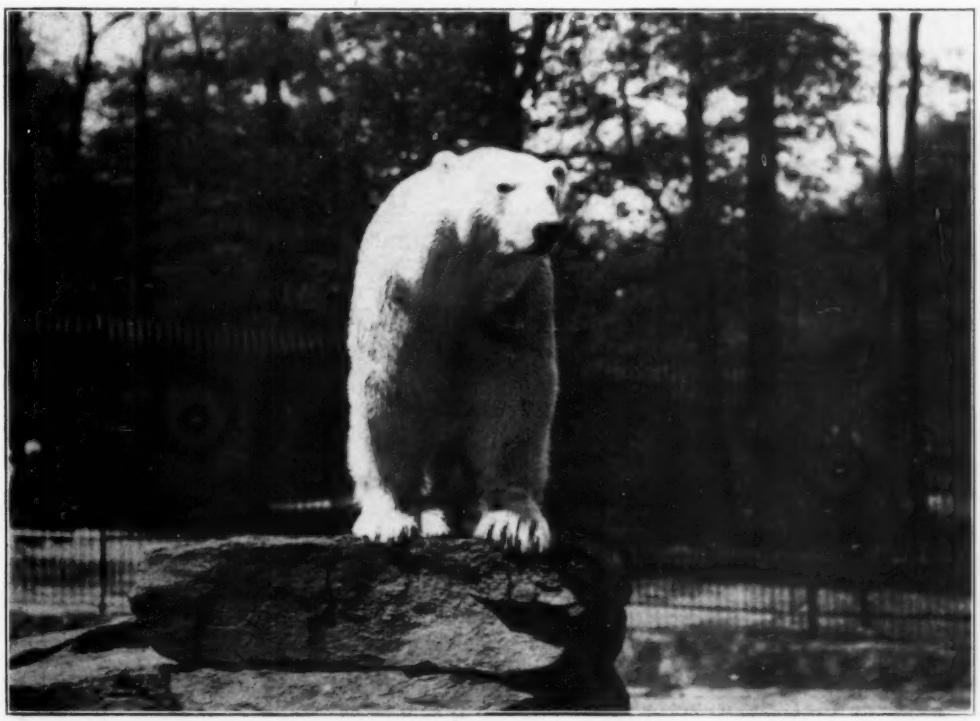
LASSOING THE GREATEST POLAR BEAR

WALTER L. BEASLEY

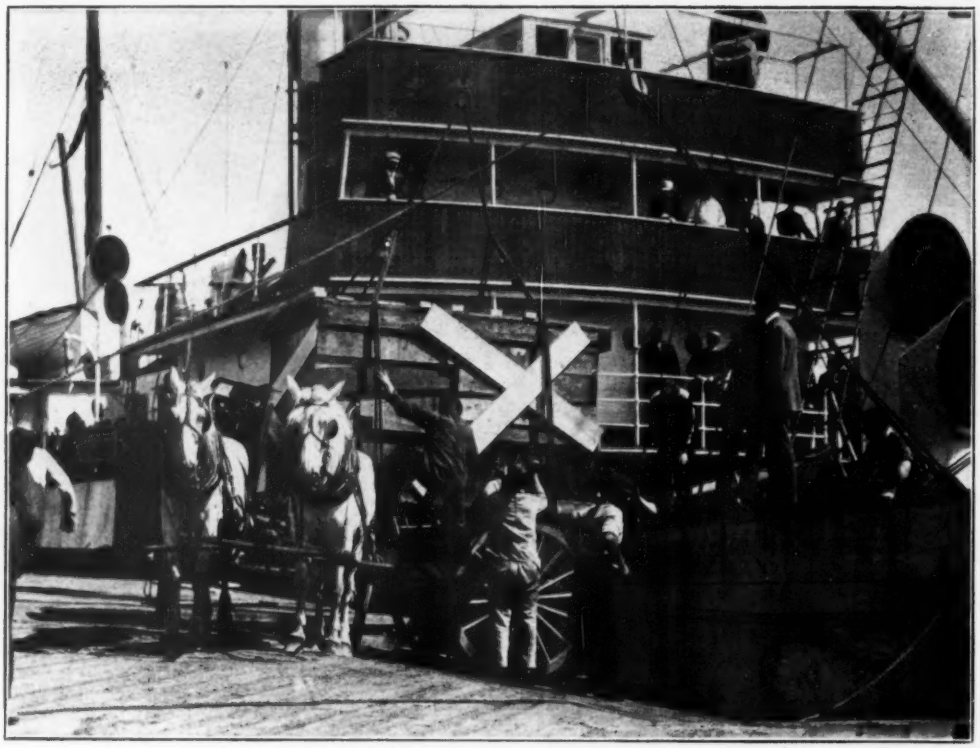
"Big Polar, sir, on the ice to the starboard!" This came from the lookout on Paul Rainey's chartered whaler while this wealthy sportsman and big game hunter was recently cruising in Arctic waters for the purpose of capturing for and presenting rare living trophies to the New York Zoological Park. This is one of the small bays of Ellesmere Land, about the 77th parallel. "Full steam ahead; get launch ready for lowering," was the captain's orders in quick response. Sure enough, a mile or so away, was the figure of the fierce Arctic king clearly outlined, standing on the very edge of an enormous pan of ice which extended several miles back to the shore. The great white-coated form stood with his neck thrust well forward trying to get the scent of his pursuers. Here was thrilling sport and excitement, for the monster was destined to be the largest Polar bear ever captured alive and transported unhurt into civilization. Then again the man-eating ice-king was to be taken alive, with the lasso, or "roped," a new experiment in capturing such ferocious monsters at close range. The big animal was evidently on the watch and in search of a batch of young seals, his favorite prey for food. The ship was headed almost straight for him, but when it struck the ice a few hundred yards to his left he made a quick dive from the ice pan. One of the most remarkable things about a Polar bear is his cleverness in diving from an ice pan. The most difficult dive for an expert swimmer to make is from something almost at a level with the water. The bear makes a more beautiful dive than can be made by human swimmer, and when he glides into the water he leaves hardly a ripple behind him. Bears cannot stay under the water very long, however; they are not very fast swimmers and are very easily overtaken. When the launch ran close up to

him he turned to fight, and then the rope lasso was thrown over his head. In a moment he had thrown the rope off his neck and was free. It was thrown once more and caught again, but as before he fought his way out of the noose to freedom. He rarely stayed in the rope for more than three or four minutes at a time, owing to his frantic efforts. It was then decided that new tactics had to be employed. Instead of getting the rope around the neck it was to be left slack until the animal had gotten his forelegs thru it and then also there would be no danger of choking him. Meanwhile the monster had been swimming among the small broken pans, but the launch soon overtook him. The lasso whizzed, and the big creature was roped just after he had climbed out onto the ice. This time the rope was permitted to lay slack until he had put his forelegs thru it. Soon the launch was got going astern and gradually started to drag the animal into the water. It was a wonderful sight, it is said, to see this enormous brute with a strong rope just behind his fore-shoulders. He would rear on his hind legs, bite at the rope and jump up and down as he was surely and steadily dragged toward the edge. Finally, seeing that the inevitable was coming, with a vicious growl he plunged into the water, for he had left the ice pans forever. The ship was signaled to move into open water as plenty of sea room was needed in which to handle the big bear.

On reaching the vessel he was hoisted high in the air and swung over the ship's deck, and in another moment the roaring, raging monster was dropped down in the hold. At once a large cage was constructed, some ten feet long and six feet broad and high. This proved, however, to be entirely too light and frail. Then the question arose, how to get him into the cage. After starving the bear for four or five days a fine, juicy piece of walrus meat and a tub of fresh water was placed inside the cage, and it was lowered down to the bear. He started directly in for these tempting rations and the trapdoor was



A FRONT VIEW OF SILVER KING, THE MONARCH OF THE ICE FLOES. HIS FAVORITE POSE IS ON A HIGH BOULDER.



ARRIVAL OF THE GIANT POLAR BEAR IN NEW YORK IN A FRAIL CAGE, THE BEAST BEING CHLOROFORMED BEFORE HE COULD BE HANDLED WITH SAFETY.

dropped, and the mighty beast was in his cage. After this both cage and bear was hoisted on deck. The construction of the cage was much too light, and on a dozen different occasions he very nearly succeeded in escaping.

One night, during a storm, the alarm was sounded and the entire crew turned out. On hurrying to the cage it was found that the bear really had his head and shoulders out. With the aid of a stout boat-hook one of the Eskimo sailors succeeded, however, in driving him back in, and soon the hole was boarded up. It was terrifying to the onlookers to see him grab hold of the smooth side of the cage with his teeth and tear out splinters a foot long. This would cause a wild stampede of Eskimos and sailors, for it looked as if he surely would be out on the deck in an instant. After this a sailor was kept watching the bear day and night, and he is said to have driven several thousand nails into the sides of that cage.

Almost the entire official staff and all of the keepers of the Zoological Park awaited the whaling vessel when she arrived at City Island, New York, with the record Polar bear of the world. On deck, in his rude cage, Silver King, who towered nine feet on his hind legs and weighed 1,200 pounds, growled and charged the frail wooden sides. Several sweeps of his mighty paw tore thru the planking. The boards were reinforced by heavier timber but as his onslaughts continued it was decided to administer chloroform. The anæsthetic was sprayed again and again over his nostrils, and, finally, he succumbed. The cage was quickly placed on a truck and hurried to the Zoological Park. Half-dazed from his big dose of chloroform, Silver King was hustled in his new home—a spacious cage having fine bathing pool, cozy sleeping den, etc. His favorite lounging place is up on a high rock boulder where he growls and watches the close approach of any inquisitive visitors. With his ideal quarters, however, and bountiful rations, he seems to be quite contented, as much so as he was on the ice pans of Greenland.

A NATIONAL PLAYGROUND IN THE ROCKIES

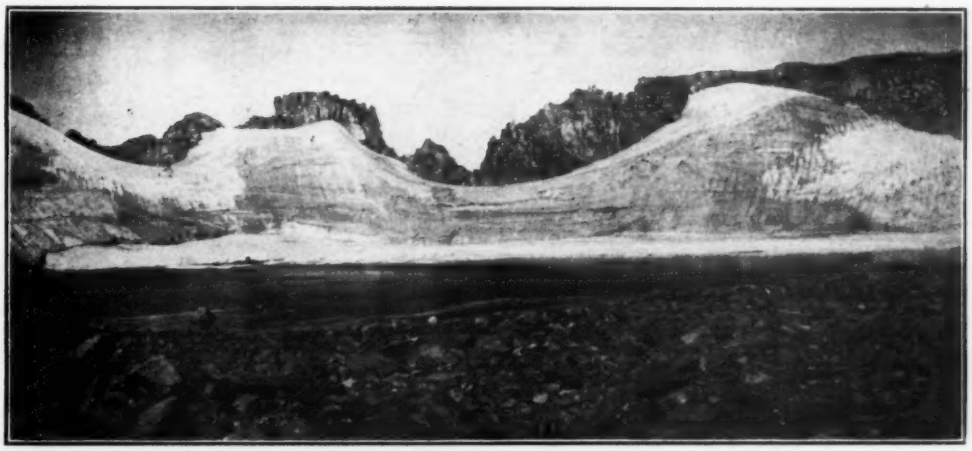
EUGENE PARSONS

A movement is on foot, led by Enos A. Mills and others, to make the entire Front Range of the Rocky Mountains in Colorado from the Wyoming line to Pike's Peak, a National Park. According to the present plan, Congress will be asked to set aside the mountain region to the north and the south of the new Rocky Mountain Park for recreation purposes. The proposed playground will include the famed Estes Park and other localities noted for climate and scenery. This part of Colorado also has a romantic history and is worth visiting because of its storied past.

It is understood that the cities and the countries most interested in the project will aid the government in the construction of a grand scenic highway thru the Front Range that will connect the Ocean-to-Ocean highway at Colorado Springs and the Lincoln highway at some point between Cheyenne and Laramie. To one side or the other of this main thorofare a network of roads and trails will make easy access to and thru this national preserve. Thus it will be possible for the health seeker and the Nature lover to meander at will on foot thru this Alpine realm of Colorado or take a gallop up some secluded bridle path, whiffing the bracing air and enjoying the glorious views in all directions.

A string of hotels and chalets and a system of good roads popularize tourist travel in Switzerland. At present American tenderfoots are kept away from the mountain recesses of the Front Range by the lack of roads and trails, to say nothing about the comforts and conveniences of civilization. Only the most hardy and enthusiastic sportsmen and mountain climbers venture into this picturesque but rugged country because of the hardships involved. Motorists know what trips to take, but the pedestrian who strays from the beaten path is apt to have some rough experiences.

If the government takes hold of the project, much can be done to make it easy to make pleasure excursions thru this upland world. The tourist can go by railroad to Idaho Springs or George-



HALLETT GLACIER, IN THE NEW ROCKY MOUNTAIN NATIONAL PARK, WHICH LIES AT THE NORTHERN BOUNDARY OF THE PROPOSED PARK.

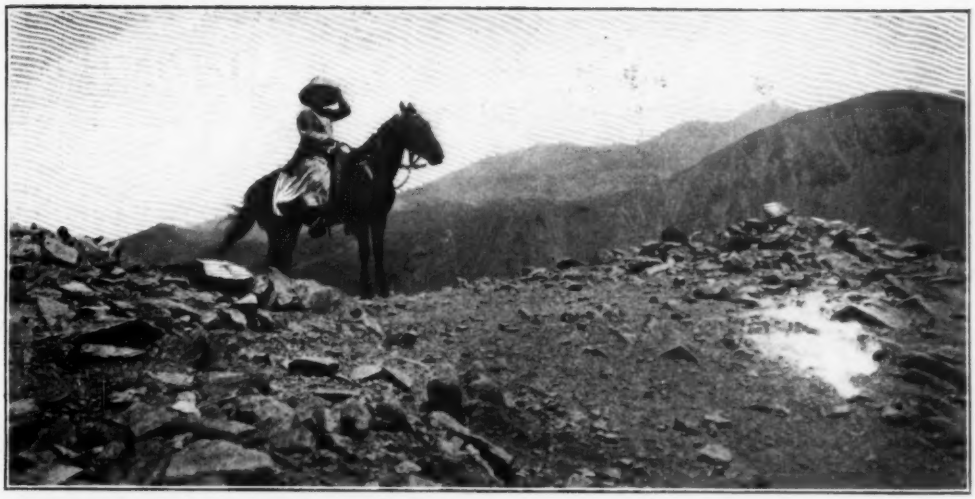
town, whence he can continue his journeying south by leisurely stages to Manitou, getting "views afoot" all the way; or he may pursue a northerly course to Eldora, Eldorado Springs, Boulder, Ward, and on to Estes Park. In a single day's tramp he may see curious rock formations, cañon erosion of scientific interest, the charmed sleep of a lonely lake in the hills, a wooded slope with wondrous clouds in the background, a flower-dotted meadow, a flashing stream stocked with trout, and a game refuge with thousands of antelope, deer, bison and other animals. Such is the dream of the public-spirited men who would fain see this pleasure-ground a reality in the near future.

The call of the wild is insistent. The city man must have recreation. The tired teacher needs a change of environment. The busy housewife should relax by going away from home to the seaside or the mountains. The captain of industry ought to let up on the strain of business conquests. These and other overworked men and women will be benefited by an outing of a fortnight or a month in the Rocky Mountains.

Colorado is a good place for a summer vacation. California, Utah, Arizona and other western states have natural wonders that have been set aside as national parks and monuments, but they are not so easily reached by the majority of Americans as is the proposed national playground in the Front Range. The natural features of this wonderland should be preserved and protected for the good of the public. It would tend to foster in the people an appreciation of scenery.

After a railroad ride of a thousand miles, at first sight of the foothills and mountains, the tenderfoot's "heart leaps up"—he longs to be there among the green glades and waterfalls, but how can he go it alone? If the way were made clear, the novice might put in some time scrambling over beetling crags and scaling dizzy precipices, but only the most daring would think of venturing into the wilds of the Rockies without a guide or a companion who had been there before. So this expanse of snow fields and emerald green valleys remains a terra incognita to him. As a result, the tourist misses some

SCENES OF LIMITLESS GRANDEUR MEET THE EYE ON EVERY TURN THRU THIS STRETCH OF WONDERLAND.



ON THE SUMMIT OF ARGENTINE PASS, THE HIGHEST THRU WAGON ROAD IN THE WORLD (13,500 FT.) LYING IN THE CENTER OF THE PROPOSED PLAYGROUND.

mountain-top experiences that would be forever after treasured in memory as a precious possession.

The conservation of scenery, not for those who are wealthy, but for the whole people of the United States, is a matter that can not be over-emphasized. Unfortunately some of the fairest portions of the Pike's Peak region are forbidden ground, for the Nature lover must pay for admission to the picturesque landscapes that should be open to the public without charge. Therefore the government ought to have control of this territory, which is said to be "as beautiful as any to be found in the United States, or, indeed, in the world."

A poetical landscape is a treasure beyond compare. Fortunate is the community that has one. Colorado has many sight places in the valleys and gorges of the foothills and the mountains, but this long stretch of rugged country, much of it forested, is eminently adapted for a national recreation park. It is an ideal place for the city dweller to spend a summer vacation. For the tired man or woman there is no better resting place—nowhere on earth—than Estes Park, which is universally recognized to be the most beautiful of Colorado's natural parks.

Colorado has been rightly described as "the playground of the Republic." The Centennial State is a vast sanitarium, but of all of its favored localities the proposed national park is one of the most renowned, scenically and historically. An outing in the wilds of this mountain region restores health and increases the joy of living. It is more accessible to a majority of Americans, especially to those living in the South and the Middle West, than the Yellowstone or the Yosemite, and the cost is not so great. A day's travel brings Chicagoans to this Rocky Mountain Wonderland, the natural home of big game, this wild garden of meadows and flowers, this snowy range of lofty peaks and their forests teeming with winged life—the butterfly, the eagle, the ouzel, the solitaire and other songsters.

CAMPFIRE TALKS

By CHAUNCEY THOMAS

No. 43—Gas

We will now talk about something concerning which no man can tell what it is—Gas. Of course there is the usual theory that a gas is a collection of little particles of matter, all hopping around at so many feet or miles per second, and all that. But 'tis only a guess. All of us know the difference, in a general way, between a solid, a liquid, and a gas, but just what causes this difference, no one knows. Heat often has considerable to do with it, evidently, but then we have white-hot iron, a sort of solid, compared to air several hundred degrees below zero, and still a gas. So heat is not all of it.

Take the case of carbon. Man has never seen liquid carbon, it is always a solid or a gas. Just why this should be no one can even guess. If we apply heat to the solid carbon we get a carbon gas, but no liquid in between, as is the case with every other element. Ice turning to water and then to steam—a gas—is the usual thing, but carbon is the single exception.

Now to most people the word "Gas" is rather vague, connected mostly with gas pipes. But gas is everywhere, I am inclined to believe, with the possible exception of the interior of solids, such as in the center of the earth itself. It is practically impossible to force all the gas out from between two metals by means of a hammer or a roller. Some little particles of gas—air—will stick, and often cause great trouble in working metals when we must have exact sure results.

Like all fluids, gas is a sticky thing, and in a smaller way acts just as does the molasses jug in January. Most of it comes out all right, but some will stick to the sides. Air between welded metals often acts the same way.

Both gases and liquids are fluids, you know. They "flow." Now the common conception of a gas is something—a sort of smoke—that spreads out in all directions and soon is lost in the surrounding atmosphere—itself a gas, or rather many mixed gases. But some gases are heavier than air, and one can pour them from glass to glass, back and forth, much as one does water. Of course, a little escapes each time, but so does water, which we call evaporation. Evaporation is but a solid or a liquid changing into a gas. Some solids evaporate, as ice, for instance. Whether all solids slowly turn to gas no one knows. It would probably take iron or gold many centuries to show a measurable loss due to evaporation of the metal, if indeed such a thing really does take place.

A gas differs from a liquid or a solid in that a gas, if free from outside pressure, will expand in all directions, as if by instinct. A solid or a liquid will not change its shape except under outside pressure, but a gas does. "Indefinitely" is a large word, and is usually handled too carelessly. So we cannot say, as do most of the school books, that a gas will expand indefinitely. But a quart of gas, such as air, would probably expand, if perfectly free from outside pressure, to the size of the earth, or perhaps larger. It would then be pretty thin, of course, but many of us have cause to think that we can see such very thin collections of gas in the Heavens. Some have figured that a comet's tail could be put into one's pocket, and the next man swears that a comet has no tail at all, that it is just a ball of gas, and that the tail is but a stream of light, much like the beam of a searchlight. Take your choice. No one knows any more about it than you do.

This fact that a gas tends to expand more or less indefinitely is what makes it possible for us to use a gas in shooting a gun. We apply heat to a solid—the powder—and it turns into a gas, and that gas is then in a hurry to get away. It pushes the bullet in one direction and the gun in the opposite direction, with equal force in each direction. But the bullet is lighter than the gun, hence travels faster than does the gun, hence goes to a greater distance from the common starting point, the place where the heat was applied to the powder.

Some there are who claim that for the first instant in a gun chamber that the powder is a liquid, that the solid powder does not turn directly into a gas, like carbon, but that the powder turns first into a liquid, and the liquid then changes into a gas. As the difference between a gas and a liquid seems, for all practical purposes, to be merely a matter of pressure and

heat, it is possible that in some high-power guns, and especially in our big cannon, that the powder does become a liquid before it turns to a gas.

Now powder is a solid, of course. The fact that it is in many pieces does not alter the fact in the least that it is a solid, in short, each grain is a solid, just as is a dumbbell. Not even a mountain is a solid in itself, but is made up of many smaller solids, for a mountain is cracked into millions of pieces. "Seams" we call the places where these separate solids of the mountain meet each other.

There is gas in all water, even in water that has been boiled. Not much in boiled water, 'tis true, as the heat tends to drive the gases out, but yet some few remain, just traces. If there were no gas in water, then we would have no fish, nor any underwater vegetable growth. This gas is mostly air. Just how far down into the sea air goes it not certain, but the air probably reaches to the very bed of the ocean in its deepest part. It is possible that deep sea life may be able to break up water into hydrogen and oxygen, and thus get the oxygen necessary to life, but the chances are that the deepest sea creature breathe air just as do the land animals, and he is five miles or so under water.

Now five miles of water weighs something. Just why the gas is not forced out of the water at such depths no one knows. At the deepest places in the sea, over five miles, the pressure is about six tons per square inch. The pressure of the air on the surface of the water is about fifteen pounds per square inch. Yet we have the air—gas—at fifteen pounds pressure getting down into that water against a pressure of six tons. There are many puzzles in Nature.

The first and foremost object of every living thing is not to produce its kind, as I and others have so often said, but to get gas. In other words, air. Stop the air, and everything instantly gives way to renewing the supply of gas. Otherwise it is death. Drowning is but smothering, and so is choking. I could never understand why drowning is thought to be such an easy death and yet men object to being hung. Tis exactly the same thing, with hanging preferred, as the rope stops the blood supply to the brain and soon soon causes unconsciousness, or even almost instant death from bursting blood vessels. Still, fashion is a great thing, even in gases. I can testify that drowning is not an easy death, as I have been near enough to it to make sure. Drowning is being buried alive.

Now drowning, smothering, hanging, and choking mean lack of gas, hence quick death. On the other hand, such a gas as chloroform is perhaps the easiest death known, except instantly fatal injury to the brain. A suicide by bullet never hears the gun go off, you know. What he hears afterwards, I don't know. Nothing, probably.

As a general rule, solids are what makes things keep still, and gases are what make them move. This remark is confined to the earth, of course. Take the railroads, for example. On each side of the locomotive are four guns, loaded with steam—a gas—and a bullet we call the cylinder head. The train is tied to the cylinder head "bullet" in such a fashion that one instant it, the train, is pushed ahead of the bullet, and the next instant the bullet pulls the train along with it. This is done by applying the pressure first at the top, then at the bottom, of the engine wheels, called the drivers.

All stationary engines depend on gas in just the same way, of course. Also most electric dynamos, indirectly. Look wherever you please, you see the constant effect of expanding gas. The railroad train, the theater curtain going up, the electric light over your head, in fact gas is the instrument we use mostly to transform one kind of energy into another kind that is the most convenient to us for the time being.

Now look at your arm. Flex your muscles. Just what causes the muscle to act as it does, no one knows. But one plausible theory is this: Take a bunch of fire crackers. Put one cracker each into an empty toy balloon. Put the toy balloons into a gunny sack. Tie a string to each end of the sack and stretch the sack out at full length.

Here we have the muscle at rest. Now light the fire crackers. They explode, and thus fill the toy balloons. These in turn fill the sack and of course it now grows shorter and thicker and hence exerts a pull on the strings that take the place of tendons.

This is the muscle in action, when it is contracted. The real work, the prime mover, you notice, is the gas from the fire crackers. Now consider the cells of the body as the toy balloons, and the what is probably alcohol in some form as the fire crackers, and you have a working theory, at least, of muscular action. This of course runs us plumb up against the prohibitionists. Yet the fact remains that all muscular action is due to some liquid turning into a gas, and that said liquid is probably alcohol. Starch in the stomach turns into a sugar—there are many different kinds of sugar remember—and this sugar in turn becomes one of many kinds of alcohol in the muscles, for there are also a number of alcohols beside the liquid brain-killer we so foolishly drink. That is also perhaps the reason why sugar is such a good food for muscle workers, it is more easily turned into alcohol in the body.

In short the muscles act, probably, a good deal like the gas engines of our automobiles. And of course the automobile

would be impossible without gas. Indirectly, in an automobile, we are shot along just as is the bullet from the gun. The cylinder head pulls, or pushes, the wheels; the wheels in turn pull and push the seat, and it is the seat that takes us forward.

Now it is commonly thought that matter is in only three forms—solid, liquid and gas, with perhaps a fourth, we are beginning to think, something like honey, or pitch. But come to think of it, what we really mean is that these three, or four, forms of matter are all that we humans know. How many forms matter actually assumes no one knows. In time we may be able to take matter "below" the solid and "above" the gas, figuratively speaking. Even now we think there may be still another form of matter, which we call the ether. That is, matter in a form that is not affected by gravitation or friction. We see friction grow less and less as we go from the solid to the liquid, and from the liquid to the gas, and it may disappear entirely when we get above the gas. Just as hardness disappears as we leave the solid for the fluid.

All that we humans know is that matter has three, four, or possibly five (ether) forms, and that energy takes various forms, such as light, heat, sound, electricity, gravitation, and probably life and thought itself. But how many other forms matter and energy can and do take we have no idea. Because we have never known it is no reason why it does not exist—whatever "it" may be? And here is another thought just as vital—energy and matter is all we know. Some consider life as a separate thing, apart from energy, while most of the scientists rank life itself as a form of energy. But because we know only these two—or three? —things in the universe, is that any reason why there are not other things just as potent? Things ever unknown and unknowable to the human brain? I do not mean to go off into a hazy atmosphere, and we will set all such things as religion and spirit, etc., aside—I mean on a strictly scientific basis. The very existence of gas was unknown for many centuries, yet we lived in and by an ocean of gas. I always smile at that saying, "the wisdom of the Ancients." They were a mighty ignorant lot—knew nothing of gas, for instance.

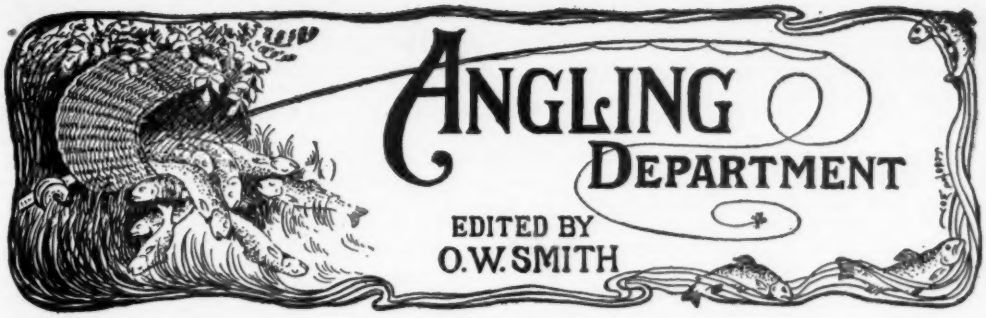
But may we not be just as ignorant of other things that surround us always, just as gas surrounded Cæsar and Plato, and they knew it not? I think so.

Looked at from below—the cave man's standpoint—we humans have done great things, but looked at from above, figuratively speaking, of course, we have done almost nothing. Who can change an element?—altho there is radium. Who has moved the earth one inch out of its orbit? All the changes man has made on the earth since his time began could not be seen with the naked eye on a two-foot globe. And almost all the changes he has made, from the removal of forests to the digging of the Panama and Suez canals, from the plowing of Europe and Asia and America to the building of New York and Babylon, all these things have been due primarily to gas.

And now I suppose I had better beat you to it by remarking that "Even this Camp Fire Talk is gas." 'Tis as good a way as any, perhaps, to get back to the things of every day life—which is the way every good piece of writing should end. Those who know how to write understand why. See De Quincey's wonderful essay on "The Knocking on the Gate in MacBeth." He knew, and so did Shakespeare.

A YOUNG BIGHORN.

Photographed within a quarter mile of Victor, Colo., by S. M. Henney, who stalked him very carefully during May, 1915, for a camera shot.



Anglers' Fireside

Letter No. 148.—The Yellow Perch.

Editor Angling Department:—I write to ask for information regarding the perch. When and where does it spawn, upon what does it subsist, what are its habits and what part of the lakes and streams does it inhabit?—A. W. C., Laramie, Wyo.

To answer you fully here would be out of the question. Briefly, then, yellow or zebra perch are spring spawners, seeking shallow water along shore or on reefs for the purpose. They may be classed with the early spring spawners. Worms, insects, minnows, almost anything, will serve as food. They move about in great schools. When you catch one, ordinarily you catch as many as you care to take. You may fish for an hour without securing a bite, then, all at once, the water will seem alive; simply, a school has come along, and you will take fish as long as it remains in your locality. If it passes, wait for another. Docks along Lake Michigan are favorite lurking places for the fish, and many a pound perch have I taken fishing a la small boy. Just where the shallow water shelves to deep along shore is a good place. Do not neglect the marge of weed beds; sometimes in them. As to bait I presume earthworms take first place, though live minnows often take larger fish. Such insects as grasshoppers and crickets are good. At times the fish will rise to properly-presented artificial flies. The man who can not appreciate fly fishing for perch is to be despaired of. For further information I would refer you to my "Some Familiar Fish."—O. W. S.

Letter No. 149.—Fly-Tier's Materials.

Editor Angling Department:—In a recent number of Outdoor Life I noticed mention of a vise for fly-tiers. Can you tell me where such a tool can be procured? I have been tying artificial flies for some time and recently turned my hand to dyeing. It is great sport to tie flies.—H. L. M., Meredith, Colo.

I presume that there are houses in the West carrying fly-tier's tools and supplies, but as I am unacquainted with them I must give you the names of eastern dealers. Abbey & Imbrie, 18 Vesey St., N. Y., carry an extensive line and no doubt the vise you desire can be procured of them. Abercrombie Fitch Co., also of New York, used to carry supplies and no doubt can supply you now. Indeed almost any dealer in fishing tackle will "put you next." You are to be congratulated, with every other angler who takes up fly-tying, for there opens before you a wonderful field of endeavor and experiment. I honestly believe there is as much real fun in tying flies as in fishing, and anyone with a wee bit of patience can soon build a good artificial presentment. The dyeing of feathers alone is heaps of fun. When I first began dyeing I resorted to dogwood, butternut bark, onion skins, etc., but soon learned that the well-known commercial colors were as good and a whole lot more convenient. There are good books upon the subject of fly-tying. Watch the book advertisements of Outdoor Life. In "The Amateur Fly-Tier's Work-Bench" I told of my experiments in coloring feathers. Watch these pages for further information.—O. W. S.

Letter No. 150.—Cowboy Life in Colorado.

Editor Angling Department:—The snapshot shows a part of a catch of fourteen speckled beauties. The largest measured 20 inches and weighed 3¼ pounds, while the smallest was slightly over 14 inches in length. They were all caught in about 20 minutes, with a willow pole for a rod and grasshoppers in the place of flies. The two young men in the picture, who made the catch, were riding after cattle along the banks of an unfrequented stream at an altitude of 9,000 feet, on the Montezuma Forest Reserve, San Miguel County, Colorado, when by chance the "big ones" were spied. The following day the same young men and other riders drove a brown bear right thru the round-up camp just at supper time. Needless to add, things were doing—but so unexpected was the visit that the bear escaped with a whole hide. Such is cowboy life in southwestern Colorado.—P. F., Norwood, Colo.

"Sport with the bark off," as I term such fishing as you describe, has always appealed to me. I like to start out with nothing but a hook and line, depending upon the woods and fields for tackle beyond that. Oh, of course, I employ the best tackle I can afford; but now and then, just to get back to first principles for a little while adds zest to the finished sport. As always, I say it is not the taking of fish nor yet the tackle that makes angling worth while, but the great outdoors, the environment. Wish that I might be with you at just one round-up!—O. W. S.

Letter No. 151.—Yew for Salmon Rods.

Editor Angling Department: —I have picked up a little more knowledge on yew wood as a rod material. The yew, I understand, makes one of the best salmon rods, has lots of life and is almost impossible to break. Select your wood, straight and knotless; cut down to about 1½ inches square. Lay out on a straight board with another on top, and weight down and leave to season. When well-seasoned shape as desired and don't be afraid of getting it too small. After rod is shaped get a piece of gas-pipe a little longer than the rod; stop one end of pipe and place rod inside; fill with linseed oil and arrange a fire so pipe can be set slanting enough that oil will not run out, and boil for one hour. Wrap to suit taste, put on mountings, and you have one of the best big fish rods that can be made. Trusting this will help solve some of your problems, I am.—H. B., Portland, Ore.

Requires a good rod to stand this sort of work. Compts. H. B., Portland, Ore.

We are grateful for this additional information regarding yew wood and method of handling same. We would like to have some angler who has used the rods come forward and tell us just how they act. I am wondering if they "set" under hard usage as lancewood does. Also has any of the members of this club attempted to use the material in fly rods; if so we would like to hear from you also.

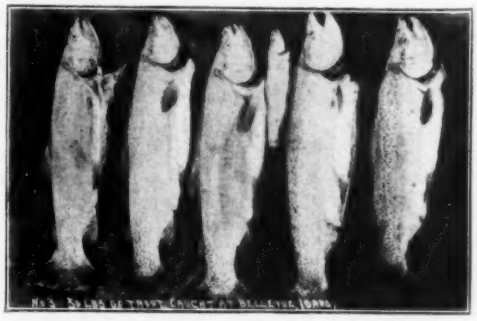
Letter No. 152.—Fishing for Calico Bass.

Editor Angling Department:—I recently saw a fish taken from a mountain stream near Beulah, Colo., which my companions said was a croppie. Now I used to catch croppies thirty-five years ago when a boy back in the Middle West, and somehow the fish my friend said was a croppie did not look as I remembered them. Are the fish taken in Colorado?—M. L. K., Pueblo, Colo.

Of course you know that there are no croppie, or crappie, as it is more often called, in the West, unless thru planting. The natural range of the fish is from Vermont and New York west thru the Great Lakes region and Mississippi Valley to North Dakota, and south to Texas. There are two species very much alike, found often in the same waters, tho the calico bass is more commonly found in the North and the crappie in the South. Where but one species is found it is more than likely to be the calico bass. The names croppie and crappie are applied to both fishes, as are also many others, such as "campbellite," "new light," "tin mouth," "paper mouth," "chinquapin perch," "speckled perch," "speckled bass," "shad," "strawberry bass," etc. It is as strawberry bass that the fish is known to me. As I said a moment ago the two fish are very much the same in appearance, tho if one remember that the crappie has only five or six dorsal spines, while the calico always possesses seven or eight, he will have no trouble in distinguishing them. There are other differences, but we will let them pass. Now for a descripeion of the fish, which may be applied loosely to either species: Small fish, seldom a foot long, of a silvery-olive color, mottled with clear olive-green, the dark mottlings gathered in small irregular bunches and covering the whole body; ventral fins with dark-olive reticulations surrounding pale spots; anal fins marked like the dorsal; a dusky opercular spot. To me, the fish is very shapely, and when in the pan highly satisfactory. Of course as a sporting proposition, calico bass are not highly regarded, though a discriminating angler can have real sport with flies when the fish are rising, and with worms, minnows and grasshoppers at other times. The fish is a slow biter, tender-mouthed, and finiky; therefore the fisherman needs to proceed with caution. Personally I am a lover of the "strawberry bass" and enjoy angling for them.—O. W. S.

Letter No. 153.—Rainbow Diet.

Editor Angling Department:—I am curious regarding the natural food of rainbow trout, as they take flies, minnows and worms impartially; can you inform me which is their natural food? How are they related to speckled trout? They do not



In size, rainbow trout puts it all over the brook lover. Compts. M. E. Jones, Bellevue, Ida.

resemble them, neither do they act like the speckled fellows do when hooked.—L. A. S., Philadelphia, Pa.

The rainbow trout is an omnivorous feeder, tho a cleanly one. Worms, larvæ, crustacea and flies probably constitute their favorite bill of fare, tho I have never found them adverse to an occasional minnow; indeed I have found minnows one of the best baits for night fishing. In a stream much fished by me with flies I have often discovered the small boys fishing with shiner minnows, and successfully, too. I much doubt the statement one often sees that the rainbow trout are not as inclined to a fish diet as are the native brook trout. If that be true, then there must be some other reason for the disappearance of the native brook trout, once the rainbow gets in. Says an authority before me: "Rainbow trout differ widely from brook trout and other pugnacious fishes in that they feed principally upon worms, larvæ, crustacea and the like, and do not take readily to minnows as food." I imagine that these conclusions are based upon observations of trout in ponds; at any rate I know that rainbow taken from wild water by me, if overly large, usually carry minnows in their "bread-baskets." Mind you I am not "knocking" the rainbow, I love him as a fly-fish, and many the fine day's sport have I enjoyed hunting him. Just the same I think there is ground for complaint regarding his tendency to piscivorousness. I have long held, and see no reason for changing my views, that it is very ill-advised to plant rainbow in streams adapted to brook trout. You might call the rainbow a sort of cousin to the brook trout, tho, as I have often pointed out in these pages, the brook trout is not a trout, but a charr. Here the rainbow has the advantage for he is a true trout, a salmon.—O. W. S.

Letter No. 154.—Where Fish Grow Large Over Night.

Editor Angling Department:—I have been reading Outdoor Life for some time and the other day the thought struck me that the members of the Fireside should be told that some of the best fishing in the country is to be found in central Oregon in the Des Chutes River and tributaries. We have any amount of rainbow trout, from legal size—six inches—up to thirty inches. Saw one that measured thirty-five inches. East Lake, which had no fish at all until stocked with rainbow fry in 1912, now supplies the angler with rainbow measuring thirty inches and weighing even ten pounds. I realize that the foregoing sounds "fishy"—but it is true. Nearly all our streams and lakes also are well supplied with "Dolly Varden" weighing up to fourteen pounds. I saw one that weighed in the neighborhood of thirty. These lakes and streams are nearly all cold water, so the fish are fine eating in spite of their size. Another thing, waters are easily reached by auto—five to seventy-five

The author with a 7½-lb. rainbow taken from East Lake, Ore.

miles from Pullman cars.—H. J. L., Redmond, Ore.

You certainly are to be congratulated on your fishing possibilities. That rainbow should attain such size and weight in four years certainly speaks well for the waters

planted. (You see I am not throwing in any hints that such a growth is impossible, for I know what rainbow can do in waters congenial.) Am sorry your letter arrived too late for the season of '15, but there is another year coming. Surely there will be a migration in your direction.—O. W. S.

Letter No. 155.—Shovel-Nosed Pike.

Editor Angling Department:—I have read with interest and pleasure many of your articles on fishing, and hope that I have at least absorbed a little of the valuable information contained therein. Now I would like to reciprocate in a small way if possible. In the July number of Outdoor Life under Letter No. 117, you state that "shovel-nosed pike" is a new one to you. Ever since my boyhood days until recent years, I have fished more or less at the so-called "flats" of Lake St. Clair, one of the Great Lakes, where the term "shovel-nosed pike" is usually applied to the common pike or pickerel, sometimes called northern or great lake pike or pickerel. This fish is quite common at the "flats" but considered of little value as a food fish, as it is generally found in the warm shallow water of the marshes or "flats." I have caught the same fish in Lake Gogebic in northern Michigan and found it very good eating. The last few years I have had opportunity for trout fishing in the small streams of this district, but as the streams are quite brushy the "garden hackle" is the bait most commonly used. This year I have taken to dry fly fishing and enjoy it very much, especially since I have purchased a 4-ounce 9-foot Leonard rod, and I am now looking forward to having an opportunity to use it on some of the larger streams where the trout run larger in size than those in this neighborhood. In this connection, will you kindly advise me if it would be safe to use this rod on trout running 4 or 5 pounds in weight, assuming that I have a fair amount of skill in handling a rod?—E. W. W., Mass, Mich.

I thank you for the information. The local names of fish are almost as varied as the localities in which found. For years I have been compiling names; it has become a sort of hobby with me, and the result is truly astonishing. In the case of the croppie I now have over 40, and the list is steadily growing. Regarding your question I would say that unless you are exceedingly expert and patient, I would not advise the use of a rod as light as 4 ounces for 4-pound trout. Of course, much depends on the character of the water to be fished; if open and deep you would not be so apt to meet with serious accident. All depends upon the man behind the rod—his temperament, skill and patience. A 4-ounce rod is light for a 5-pound trout, yet not too light for the right kind of a man.—O. W. S.

Landing a good one at Ripley Lake, Wis. Compts. E. R. Fraser, Gibson City, Ill.

Letter No. 156.—On Playing a Bass.

Editor Angling Department:—We have been having a discussion here regarding the proper method of playing a bass; will you please give us your method?—H. O. G.,

My answer is, "all depends." Depends upon the character of the water, quality of the tackle employed, size and game quality of the fish and my need for meat. As I am fond of saying, no two ichthyic battles are exactly alike; so, what to do depends upon local conditions. I know men who "pull down" every fish that leaps into the air, tactics to which I seldom resort. If the bass can shake out the hook he is thrice welcome to his freedom; if not, I will play him to exhaustion, and if I need meat in camp I will take him out of the wet; if not I gently unhook and set him at liberty. In bait casting with artificial lures there is no need for "setting the hook," whatever may be true of still-fishing, the charging bass attends to that. I know this is contrary to the general run of advice, but I never bother about striking and I lose few fish at the beginning of a battle. Always keep the tip of the rod pointed in the direction of the lure and the line taut; nine times out of ten that will be enough; the tenth time will be when the fish are "rising short," perhaps are not hungry, and "taste" the lure—then strike, to the left and up. As I said a moment ago I do not "pull down" the fish; a taut line will effectively prevent discharging the hook, and the leap is the best and most thrilling instant in the whole game. After the fish is "on," keep the rod pointed upward at an angle of 45° and free to swing to the right or left if the fish leaps suddenly. Tho you have the reel handle in your fingers you can not act quickly enough to keep a taut line with the reel alone; you must swing the rod sidewise to secure the requisite

tension. Give the bass line enough to play his end of the game well, remember it is the playing of the fish and not its capture that makes angling worth while. Better far the fish escape than that you take one single advantage of him. Play him to exhaustion, then some. If small he can be swung into the boat by strength of rod alone; if heavy use a landing net. Do not abuse your rod simply because you know it is a good one. If you lack a net, catch the fish by the gills or under jaw—never touch the line—and with a swinging motion lift him into the boat. Never hurry; you have all the time there is. Perhaps you have not settled your controversy, but I have given you my methods in a word.—O. W. S.

Letter No. 157—Fly-Fishing for Steel-head.

Editor Angling Department:—In connection with the article on The Steel-head Trout (Salmo-gairdneri) which is in the August number of Outdoor Life, it may interest your readers to learn of my experiences in fly-fishing for this great fighter in the Rogue River in Southern Oregon I spent several weeks last summer camping and fishing this fine stream from below Gold Hill up thru the Medford Valley to above the power dam on the Crater Lake road trying out various patterns of standard trout flies. I happened to have my case of Atlantic Salmon flies and I soon found that these were much more successful than trout flies. The fish readily took several of these patterns; the Fiery Brown, Dusty Miller and Jack Scott being very good and in particular the Durham Ranger proved to be a sure killer. On this last named fly I killed thirty-one fish running from two to seven pounds and lost as many more owing to very light tackle. I used a 5¾-ounce Leonard fly rod and nine-foot tapered trout leaders and I can assure any brother angler that with the use of equipment of this light caliber the killing of six and seven-pound steelhead in swift, white water is as exciting as looping the loop in a flying machine. Except in the mighty rivers of Quebec, where I have killed large Fontinalis on the same kind of tackle, have I ever had more exciting sport.—A. H. G., Bradford, Pa.

Trout Lore

Chapter 22.—The Trout in the Pan.

I have in my library an old English work upon the ways of trout, to which is appended a chapter upon cookery, the importance of which no outdoor man will question, so I add, without further apology, such a chapter to "Trout Lore." The article upon cooking in that ancient angling book begins with this naive sentence, "First catch your trout," a sage bit of advice, by the way, as more than one would-be culinary artist can testify. Perhaps it is presumptious on me to add a word to the sentence of the long dead monk, but I would like to insist that you catch your trout yourself and perhaps that is what he meant. Be it known that only those who have actually learned how to stalk and capture the wily spotted denizens of the swift water and shaded pools, have seen the lissom rod bend perilously while the straining gossimer thread sang a song of victory in staccato notes, can appreciate the true flavor of the firm, sweet flesh. But to come down out of the clouds: trout cooked right by the stream, almost lifted from the water into the pan, is no more like the fish carried all day, even tho packed in ice, than a peach from the Italian's stand around the corner is like the fruit fresh plucked beneath California's blue skies. Leaving the environment out of the question, and there is not the shadow of a doubt but that it adds a certain piquant tang, trout should be cooked by the stream from which taken. In order that we may get at the matter conveniently, we will first talk of cooking trout as accomplished when the angler is provided with all the requisite tools, and work our way down to the man provided only with fish, a match and an out-of-door appetite.

BY THE WAY OF AN INTRODUCTION

The first requisite for baking, after you have the fish, is the baker. After many experiments I have come to the conclusion that there is no baking contrivance equal to the reflecting type of oven. (I should say "we" thruout this chapter, for my wife knows more about the matter than I and has carried on most of the experiments.) Somehow the open baker gives the fish a flavor, a tang from the open fire, that the fish baked in a closed oven lacks. Dress the fish carefully, leaving the head on for good measure. Moisten the skin with butter or bacon drippings, I prefer the latter, and place in the pan with a thin slice or two of bacon within the body cavity as well as three or four in the pan. You can use butter if you prefer, or any kind of fat. Season to taste with salt and pepper. Set near the first at first, until the skin begins

BAKED TROUT

to brown, then set back and bake slowly. Be careful not to over-bake or the meat will dry out and become somewhat tasteless. Baste frequently with juices. I caught a 3-pound fontinalis last season, and cooked as above. A more delicious morsel I never tasted. Sometimes we make a stuffing as follows: Moisten bits of dry bread, the dryer the better, in warm water; squeeze out superfluous moisture with hands, add salt, pepper, celery seed, or sage, or finely chopped onion. Place this stuffing within the body cavity, not forgetting the slices of bacon mentioned above, and either sew in or wind string about the body. Should there be more stuffing than the body cavity will contain, pile in one corner of the dripping pan. The above directions can be followed if baking in a closed oven.

TROUT BAKED IN CLAY

If you can find clay of the right consistency, red or gray, take your trout just as it came from the water and rub clay over the body, head, gills and all. When first coating has set somewhat add more until you have covered the whole body to a depth of three inches ore more. Dry by the fire for fifteen minutes or so. Bury in the hot coals and ashes until clay is baked dry and hard. Pull the brick out of the fire and break open with the camp axe. The intestines will have shrunk to a little black ball and can be lifted out with a forked stick. The back bone will easily separate from the flesh. Eat the meat from the half shell, as it were, or lift free. The skin will stick to the clay. Season after cooking, of course.

While a trout cannot be planked as successfully as can a black bass, owing to its body-form, still it can be so cooked and is truly delicious. If you do not possess a ready-made plank of sweet hardwood — oak, maple, beech — split one some two or three inches thick; prop in front of fire until piping hot. Split the trout down the back, but not thru the belly skin, and open like a book. Clean thoroly and wipe dry. Nail to hot plank, wide open, skin side down; be sure and drive one nail thru the thick part of the tail. Set in front of the fire. Tend carefully, basting continually with a piece of bacon tied to a stick held above it. Reverse the plank frequently so that both ends of trout will cook equally. When done serve on the plank, first seasoning to taste. Preserve the plank for a second fish, you will want it.

PLANKED TROUT

While I am not partial to boiled trout, it serves as a change in diet, important if on a long camping expedition. Only large fish, from two pounds up, should be boiled. Dress, removing all fins but leave the head on, as it helps to hold the fish together. Wrap the fish securely in a clean cloth, and tie or sew. Have the kettle full of boiling water, well salted, to which a little vinegar or the juice of a lemon has been added. Fish boil quickly, allow about five minutes to the pound. Should be served with a sauce, of which there are several. This is good: Two tablespoons of bacon fat or butter, one of flour, ¼ of salt, and sufficient pepper to add flavor. Rub all of these ingredients together, beating well. Pour on about two cups of boiling

BOILED TROUT

"I have come to the conclusion that there is no baking contrivance equal to the reflecting type of oven."

". . . Place seven slices of bacon in the pan."

water and cook for two minutes. Serve at once.

Once more I must confess myself not altogether in sympathy with the dish, and yet I give it for the sake of variety and for those who like chowder. Dress about four pounds of trout, cut into convenient pieces, removing bones. Take a half pound of bacon or fat pork chopped and fry in the bottom of the camp kettle. Add two medium sized onions, sliced fine, and fry until brown. Have ready eight large potatoes sliced lengthwise. If you have a skimmer remove the bits of onion, not forgetting to replace them when kettle is ready for closing, but if you are without that convenient implement, better leave the onion where it is. Now add a layer of fish, then one of potatoes, one of fish and one of potatoes, and so on until kettle is full or your supply of ingredients is exhausted. Sometimes I add a slice of bacon to each layer. Pour over all sufficient boiling water to fill kettle within two inches of top, cover and cook twenty-five or thirty minutes. Dish out and serve. Let each season with salt and pepper to suit his taste. Some camp cooks add any vegetables they happen to have—carrots, turnips, etc., but I—well, I do not.

TROUT CHOWDER

Again and again I have been called upon to inform my correspondents of "some other way of cooking trout than frying, for we are sick unto death of fried trout." I cannot understand that. I have had fried trout once a day and sometimes twice, for a whole month and not grown weary of them. Cooks usually boil fish in fat, for that is cook-book "frying," but I do not, I "sauté," properly speaking. Dress the fish and wipe dry, if recently caught. Sever the backbone midway between head and tail to prevent curling. Remove the heads unless you can stomach "pop-eyes." If the pan is going to be crowded, better clip the tails for they stick. Have ready a bed of flameless hot coals; lacking that, three stones or a camp-grate (see last chapter), and plenty of small twigs for fire-wood. Do not attempt to fry fish over a large fire. Now place several slices of bacon in the pan, sufficient to make plenty of fat; or use sweet butter, if you have and prefer it. When the bacon is browned, remove to platter and drop the fish in the sizzling fat, one by one. Fish were previously salted. Do not attempt to fry too many at once. When brown upon one side, turn over and brown the other. Keep fat sizzling all the time, by adding fuel twig by twig, or drawing fresh coals under the pan. If you lack frying material at any time add butter or more fat. The secret of proper frying is plenty of heat. Never let the fat cool. If you have too much fat, turn off just before you finish the job and brown, being careful that you do not burn. Eternay vigilance is the price of delicious fried fish. Some cooks roll their fish in cornmeal, flour or bread crumbs before placing them in the pan, which is all right for perch, rock bass and such common gentry, but I want my trout crumb free and water pure.

FRIED TROUT

There arrives days when we find ourselves without a fry-pan and hungry for fish, yet without cooking utensils we can manage to get along. Once upon a time my piscatorial partner and I went into the woods upon our annual vacation and when we unpacked our outfit we found ourselves without a fry-pan of any description, yet we stayed and had a good time. To spit trout, clean and wipe dry, remove gills but do not cut off the heads. Cut and peel

SPITTED TROUT

two green sticks, preferably hardwood, and sharpen one end. Thrust thru the fish just back of the gill covers and close to the backbone. My rule is, a fish and a slice of bacon, a fish and a slice of bacon, and so on until I have all I need for a meal. Only small or medium sized fish should be used and consequently the stick should not be overly large. With a good bed of coals it is possible to thoroly cook a string of trout in this manner and have them come to the camp table done to a turn. A large trout can be spitted over the fire by running a hardwood stick thru the body lengthwise, bacon on the inside, wrapped about with copper wire, suspended upon wire in such a manner that it can be whirled, twirled and turned until cooked in every part.

"Eternal vigilance is the price of delicious fried fish."

There is a way of cooking trout which can be accomplished without tools and which does not require the attention that the one just described does. Select fish of about the same size and not overly large, dress, removing heads or not as suits your imagination; salt as you require. But before you did this, you built a good large fire close down by the water's edge, on the sand and round stones, using hard wood if it is to be found. When the fire has burned down to a bed of glowing coals and hot ashes, you throw any smoking sticks into the stream and lay an armful of balsam twigs upon the hot base until you have a layer some six or seven inches thick. Now place your trout side by side upon the green bed and cover with another layer of green twigs; over all scrape some of the hot ashes and stones or simply weigh down with a couple of rocks. Now sit down and invite your soul. Watch that little tip-up down yonder on the sand spit, teetering and mincing femininely. Hear that yellow-throat sing, crazed with the joy of life. From back in the woods comes the dull boom of a drumming grouse. Twenty minutes or so pass before you know it. Remove the stones and ashes, now the upper layer of twigs. There are your fish, perfect in color and form. Touch them gently, for they are thoroly cooked. Now dine upon trout flavored with resinous balsam. Sounds good, does it not? Well, try it the next time you are out, and may all the gods of the cuisine be with you.

A QUICK METHOD OF COOKING TROUT

An angler when on a long hike in a remote country sometimes wishes to preserve trout temporarily, so it may not be out of place in this connection to give the modus operandi. The most simple method is to split along the back and remove the backbone as well as entrails, then salt thoroly and hang up on a frame over a smudge and smoke, the length of time depending upon the density of the smoke and your purpose, twenty-four hours being sufficient to preserve for several days, but if you wish to keep for any length of time, three days and nights will be none too long. Another method is to make a weak brine and leave the fish "in soak" for twenty-four or forty-eight hours before smoking. Personally I prefer the dry salting.

DRIED, SOMETIMES CALLED JERKED TROUT

Some that did not get away.

A Day on the Bitter Root River

The Bitter Root River is in western Montana, in the heart of the Rocky Mountains. It is an ideal river for the fisherman; fast in spots, falling over large boulders and forming swirling pools; and then in other spots flowing slowly for a hundred feet with a deep pool at the end, surrounded by trees and bushes with their limbs almost touching the water. But all trout fishermen know just such a stream and no doubt have already formed a picture in their mind's eye of a stream, such as the Bitter Root River is.

Our camp lay perhaps 100 feet back from the river. It was not a permanent camp, merely a tent and the usual camp equipment. Yet it was an ideal spot for a camp, on a little knoll in a grove of trees. A quiet spot and one to be appreciated by the tired fisherman. Here my father and I fell to sleep, listening to Nature's music rendered by the water rippling over the rocks.

But I must remember the title which I have given this story and tell of the one day's fishing I will never forget. It was to be our last day there, and we were loath to leave the spot. So we were up bright and early. It was cold, as were all those mornings in the mountains. We ate our breakfast of bacon, eggs and coffee, and a dinner at the Waldorf could not have beaten such a meal. We lost a little time getting started because nothing would do but that my father should smoke his pipe. "Just for luck, you know," he said. So now when we are starting out in the morning for a day's fishing I insist upon his smoking his pipe, and I join him, because now I can also fill a pipe.

The sun had just cleared the tops of the mountains when we started to fish. And such a morning as it was; clear, cold and beautiful. That morning the Bitter Root River seemed like a stream flowing thro the Garden of Eden. I, being young and eager, made the first cast. I was using a "royal coachman" for a dropper and a "brown hackle" as my other fly. My first cast was a failure, the flies hitting the water with a splash. But the next was more successful and soon a twelve-inch rainbow beauty was secure within my creel. My father had gone on up the stream and in a moment I heard a shout: "I have him, I have him, the biggest one that ever swam in this river." I ran hurriedly to him and sure enough he did have what seemed to be "the father of 'em all." Up and down the pool he played him. Time and time again the trout broke water only to find himself never once with an inch of slack line, as my father is a fisherman. At last weary and worn out after the long fight, father reeled him in and netted him. And such a beauty as he was! Almost twenty inches long and red on his belly. He was surely a "red belly," as we called the large ones.

"Now, son," said my father, seating himself on a rock and lighting once more his pipe, "let's see you get a better one than that."

"I will," said I, "and out of the next pool."

"I surely hope you do," said father, because he is a good sport.

I approached the next pool full of hope and determination. I cast many times and each time carefully, but with no luck. Finally father, who had gone on ahead, be-

came impatient and called to me to come on. But I had to try one more cast. I cast too far and my dropper caught on the limb of a tree, on the other side of the pool. It hung there for a moment and then dropped into the pool. Splash; a trout had risen and taken my fly. Bang; I set him and I instantly knew that it was not a little one. "O, dad, I've got 'em, I've got 'im," I shouted. And sure enough, I seemed to have a big one. Up and down the pool he went, breaking water at each turn. I thought that he never would grow weary. My wrist was tired and my limbs were cramped from standing in the cold water. Slowly, but surely, I worked him nearer and at last beached him on a little strip of sand. He was larger than father's and proved to be the largest of the day, if—if one had not gotten away.

That is why I have written this tale, gentle reader. There is a spot in the Bitter Root River where the stream comes to a fallen tree and flows out around it, forming the most ideal pool one could imagine. The river here is slow but not sluggigsh. Father dropped a fly on this pool and was immediately rewarded with a wonderful strike, apparently the best of the day. It was the largest trout I have ever seen—but why prolong the story? The line became entangled in a branch of the tree and, lo, Mr. Rainbow Trout was gone. But to you, my reader, I will now disclose a secret. If you are looking for the largest trout that swims, go to Montana. Go up the Bitter Root River until you come to this pool. Oh no, you can't miss; just remember a fallen tree and a quiet pool. Yes, I am sure that big one is still there.

GEORGE PIERSOL MURRAY, JR.

Casting Lures. A Post-Season Article

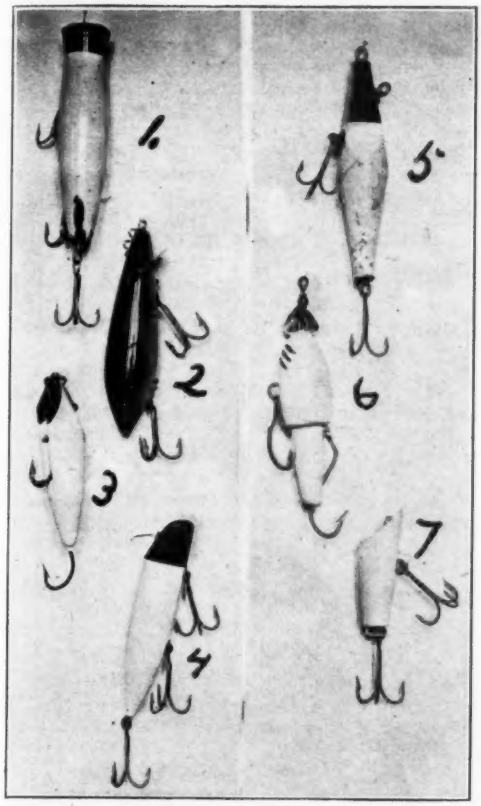
By the Angling Editor.

This is going to be an article for you to file away for reference when the winter of our discontent is past. Always we have tackle articles and plug articles in the springtime, when the season looms large and bright just ahead; but because I like to be "different," and because some experiments and experiences of the past season bulk large above memories' horizon, I am going to talk of lures when other fellows are talking of guns and Thanksgiving. After all, need I apologize or give a reason for my unusual act? I trow not. We are all fishermen here. So, come fellows, pile the wood in the old fireplace and gather about in your easy chairs. Now, comfortably situated, we are ready for a post-season gabfest.

I think I am safe in saying that 1915 produced more new lures than any single year heretofore—a statement, which, by the way, might be true of each year since "plugs" came to be recognized as the most successful and sportsmanlike lure for bass, pike and walleyes. I think no argumentation will be allowed here. "Plugs" are generally regarded as "more sportsmanlike," and we all know that as a rule they are more successful than live bait, even. So far as I know the season just closed produced no baits radically different from those of the year preceding, simply modifications in form and action. Perhaps the manufacturers remembered my preference for red and white colors. At any rate, with two exceptions, all those sent me during the season just closed were white, or white and red, white lures with a little red at the forward end. One of the exceptions was all white (No. 7), and the other of a brown-green color (No. 2). I have long contended thru the outdoor press that in average water there is no color combination equal to that of white body and red head, and my experience with the lures here illustrated serves to confirm my opinion. These lures were all tried out under exactly the same conditions, and the results were uniformly satisfactory. But let us look them over, and you may ask all the questions you please as we pass them from hand to hand. (Look out for the hooks; I always keep them sharp, as a good fisherman should. Some casters do not know it, but more fish are lost because hooks are dull than for any other reason, unless it be poor control of rod. In ordinary fishing the lure strikes against rocks and snags times without number, a single morning's casting often being sufficient to dull a hook beyond the point of efficiency. No pun intended. Keep a sharp file handy).

The first hook tried out by me was the "Cupped Wobbler" (No. 1), and because I liked it so well I very nearly neglected to try out the others. That has always been my trouble; I fall in love with a lure, then for fear that I will hurt its feelings, I neglect putting it back in the case. Truth is I cast longer than I should with the Wobbler, and the longer I cast the better I liked it. It was tough casting, upon the shore of a snaggy lake, and the way I battered that lure against the logs and rocks was a shame. Bless you, I battered the enamel half off, but the lure took bass. You see it is a modification of the old "Flutted Wobbler," a hollow cup instead of the flutes, the lure acting very much as did its predecessor, darting thru the water, upon the surface or deep down, as the operator desires. Nothing unique or original about it, but a fish-getter just the same.

But hand me that greenish-brown contraption (No. 2), the last-born "Dowagiac." The



Casting Lures: 1—Cupped Wobbler; 2—The latest Heddon; 3—The Woggle Bug; 4—Can you name it? 5—The Moonlight people's last attempt; 6—The Red Fin people come back; 7—Somebody has a hunch.

hooks are placed with the usual wisdom of the house responsible for its existence. Note the metal collar, which, when the lure is drawn thru the water, produces a darting motion. Then, too, the line may be so attached as to determine the depth at which it travels. Colored like a perch, somewhat, enough to fool bronze-backs which have learned to feed upon those fishes. One of the main attractivities to me is the manner in which it travels—"backward, like a crab." It comes the nearest being "something new" of any of the 1915 lures tried out by me. While I am a firm believer in white and red, still one should carry a few darker lures, and this has tested out satisfactorily. To a mere man it is very fetching in the water, and if it looks one-half as good to bass it is bound to become an "old favorite."

Do you see that rather peculiar split lure, hooks half concealed? Well, hand it here. It's the "Woggle Bug" (No. 3) and a very efficient buggle wog it has proven itself, too. The two half-concealed hooks, one of which shows in the photograph, are held in place by springs which instantly let go when a fish strikes, the result being that the bass is held by a single hook. On the morning when we tried out the lure, the Doctor took three bass, and each time the fish was held by a single hook which stood out and away from the lure. The advantages of such an arrangement are too apparent to require comment. A bass held by three or four trebles, perhaps, is not going to put up the fight that one held by a single hook will, but you fellows all know that. The colors are red and white, of course, and the lure is of the surface-under-water sort, cutting all the didos, up and down and sidewise, that a successful bass lure should.

There is another red-headed woodpecker in the same bunch (No. 4); pass it along. This, too, is a wobbler, which, because of the scooped-out head, shovel-nosed, will sound the depths if you reel fast enough. And it is a wobbler of the wobblers. While it is but a modification of a well-known type, it proved a fish-getter. Either I was unusually fortunate in my few days on bass waters this past season or these lures were very attractive, for always, with each and every one, I caught fish. Be it said, I never attempted to "make a catch," for that is contrary to my religious principles; but each lure has a record of several bass. The lure stood the pounding incident to rough casting and came out without a crack, which speaks well for its maker.

Now hand me that square-headed, red-headed woodpecker (No. 5). While I took seven bass with it, I have cut seven notches on the lower side as a constant reminder of its effectiveness, it is as a pike lure that I found it a wonder. A certain mizzling mid-July day I visited a shallow grass lake, and the way the small pike responded to the invitation of the square-headed gentleman was simply wonderful. Just look it over and note what the pike's teeth did to it. I always have suspicions of a lure that comes out of a fellow's tackle box without a sign of battle, glistening and bright. But when one looks like this fellow I am pretty sure that it has proven something other than a tackle-box ornament. No angler need be told, after considering its shape, that the way it acts in the water is very erratic. Just the same, in surface-under-water lures, those sidewise darters are the thing. No one should think of using anything but a surface lure or one that will float, where snags are at all numerous.

But the evening is lengthening, so hand me that one with the metal fin (No. 6), which betokens its kinship to the well and favorably known Red Fins—lures which spell fish to those who know how to handle them. The lure with the collar of course could not come in here, but this is sure a new one. First, it is as near weedless as

a hook can be and not be fishless also. The rear hook in the illustration has been pressed up for photographic reasons, but in actual fishing it travels low, and the point is protected by the body. The double hook travels with points turned in as you see. Can be cast right in amid the weeds without fear of complications. Just the same, the arrangement of the hooks is such that no bass can strike without running mighty good chances of being presented with a pointed lesson. The metal fins, the one on the under side of the body not showing in the picture, wriggle and glint as the lure is drawn thru the water. The lure has other good points, but, gosh! see how late it is getting.

However, pass that white, shovel-nosed catfish this way for a moment (No. 7) and allow me to discourse learnedly regarding its charms, for it has them. You all know how vexatious it is to have a hook "jam," and even the best of them will sometimes do it unless built to obviate such unhappy contingencies. The illustration is so small that you can not see it very well, but placed about the attachment of the hook is a little wire circle which effectively prevents the treble from turning sidewise. A big pike struck the one before you and bent that wire guard seven ways for Sunday. What did you ask? "Did I get the fish?" Your question is almost impertinent, but seeing you ask, I will answer, "Yes, sir, I did." (Did you ever hear of my not catching a fish?) I want to have you note that peculiar shovel-nosed shape, for, with fast reeling, that lure gets down where the big ones lie. As I think I remarked when first I picked it up, it is all white, and I can't help thinking that a dash of color, say red, would be something of an improvement.

Now, I want to tell you a few of the casting secrets discovered this last summer, for always I am finding out things. First, then, there is that new over-hand—— What's that? You must be going? Well, the next time we get together, if you will let me, I will talk on "Some Casting Wrinkles of 1915."

Wobblers and How to Make Them

M. A. Wright.

The past few seasons have brought forth a flood of artificial baits, about 20 per cent of which are of the wobbler type. Nearly all of these baits have been designed to resemble a minnow either in appearance or in their actions, and some embody both. My observations have convinced me that a fish does not strike a "plug" bait or spoon hook with any intention of eating it, but that he rushes at it to drive the intruder from his dominion, and as the "intruder" does not scare, he strikes it.

I first came to this conclusion after watching some bass and pike in a large tank. The larger fish would not permit a small fish to be within several feet of them without darting after it and then returning to their former resting-place I have also caught pike and pickerel on a spoon hook, that had other fish in their stomachs so large that the tail was yet visible in their throats. Now these fish could not have swallowed another bite if they tried, so from this it appears that the shape of the bait is not near so important as the fuss it kicks up in some old bronze-back or wall-eye's private waters; and as white is visible at greater distances under water than any other color it should be the predominating color, with, perhaps, a dash of red or yellow.

Wild and erratic wobbling and diving is easy to get after you have a few pointers. Referring you to the cuts, Fig. 1 shows a double-ender that is made from a round shaft of wood with the ends beveled off. You will note the ends are alike except the position of the eyes where the line is to be tied; the reason for this is explained a little later. Fig. 2 is a single-ended bait similer to Rush's Tango bait. Fig. 3 is a minnow-shaped bait with the top cut away at the forward end. Fig. 4 is another double-ender, round throughout its length and straight on the under side. This bait does not travel as deep as No. 1 but wobbles slower and farther to each side. Fig. 5 is a small bait similar to No. 2, but has a small split ring for attaching flies or feathered hooks. I have found this superior to a small spoon or spinner to place ahead of a bass fly. Fig. 6 shows how to open a screw eye and Fig. 7 how to close it after the hook has been inserted. Fig. 8 is another view of No. 2, also a diagram for controlling the action of the bait.

In any of the above baits the greater the angle 'A' is made the deeper the bait will dive, and the longer dimension 'B' is made the slower and farther to each side it will wobble, and diminishing these distances will give opposite results. A wide and thin bait dives deeper and wobbles faster than a narrow, deep bait.

After deciding on the size and shape of the baits you wish, procure some sound, straight-grained red cedar or cypress, preferably red cedar, a jack-knife and some sandpaper for the bodies, a dozen 1-0 treble hooks and some No. 216 screw eyes; also a small can of flat white paint and such other colors as you wish, a 4-ounce bottle of amyl acetate or pure banana oil and

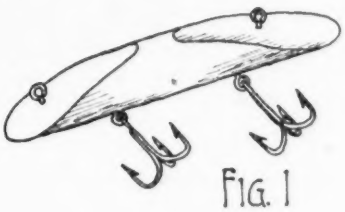


FIG. 1

FIG. 2

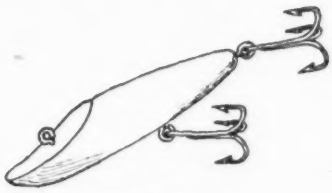


FIG. 3

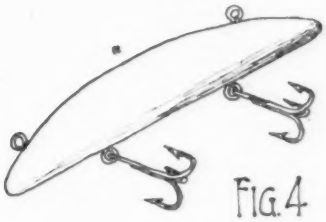


FIG. 4

FIG. 5

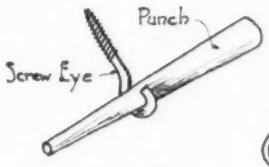


FIG. 6

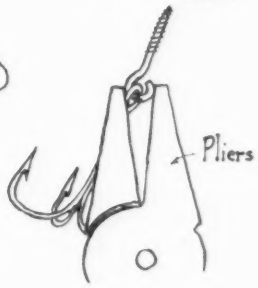


FIG. 7

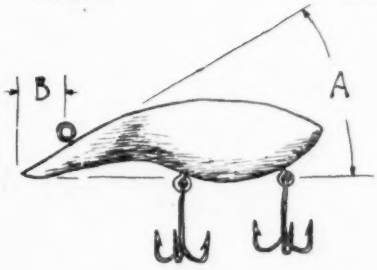
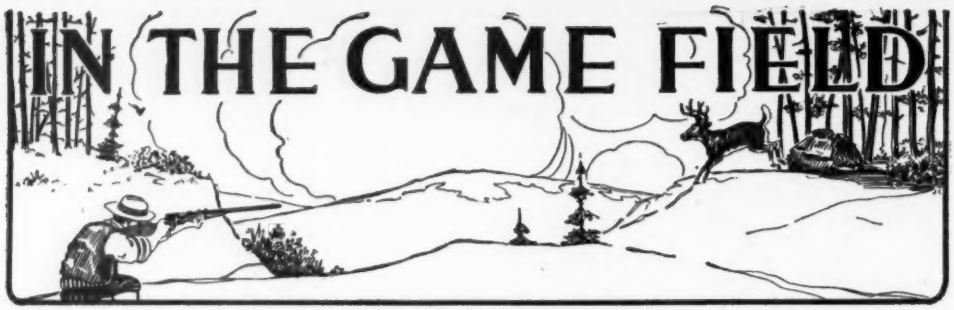


FIG. 8

WOBBLERS

some transparent celluloid (old kodak films will do). Cut the celluloid in small pieces. place in a bottle, cover with banana oil and cork tightly. In about six hours the celluloid will be dissolved; then add enough banana oil to make the mixture of about the consistency of varnish. This makes a varnish that when dry is a coating of celluloid that is very transparent, hard, will not crack or peel and is waterproof. It also makes a fine cement or rod varnish. About four coats are required for a good job, but as it dries rapidly it does not delay you any.

Now block out a couple of bodies with a knife and sandpaper them down smooth, being careful to get them as near symmetrical as possible. Screw in the hooks and line eyes and give a coat of flat white paint; when dry take them out and try them. If the right action and depth have been obtained, give them three or four more coats of paint, allowing ample time for each coat to dry. Then give about four coats of celluloid varnish and you are ready for an outing. Enamel paints may be used in place of celluloid varnish, but are not near as satisfactory.



Outdoor Life will be glad to receive information at any time of any infraction of the game laws of any state. Such information will always be immediately communicated to the game department of the state in which the infringement is alleged to have been committed, after which it will be our aim to exercise a stringent espionage over the carrying out of the game department's duties in the premises. It is not our intention to divert such information from the game department channels, but rather to solicit such information in addition to what has already been sent to the department by the informant.

A Public Hunt in the Blue Ridge Mountains

Editor Outdoor Life:—In the Virginia mountains years ago, a drive participated in by three or more men, was a "public hunt," and all guns forming it were entitled to a share of the game killed, or in case the deer was sold the pro rata of the amount realized. A "private hunt" was usually still hunting by one or two men.

The mountain men had a few hounds, but rarely mustered enough guns to fill all of the water or mountain stands. When they found that I was ready to go on any sort of expedition, at almost any time, they formed the habit of stopping at the hotel and giving me a chance to go along.

One morning a grizzled veteran came to my bungalow and said that if I would join the party he could muster five guns; and that he had two of the best hounds in the mountains. I was ready in a few minutes, and two hundred yards from the hotel all signs of people and their ways vanished. We were in a narrow valley of the Blue Ridge, with fine purple mountains rolling up on either hand.

The old man in charge of the arrangements placed us high on the east side of the valley, as for some reason he expected the deer, when started, to cross the mountain. He then made a wide detour and began to drive with the dogs. As it turned out, he had made an error in stationing us, as the dogs ran three deer which all went to water instead of to the mountain. Several hours passed and there was nothing doing. At last our friend appeared, after getting the dogs, and we concluded that the day was done, as far as sport was concerned; but our mountain man thought differently. He said, "There are more deer in this country than you men think, and if you will join in a drive of the big piece of brush between the two roads, we may kill a deer yet."

He placed us on stands in or near the of the roads, and then, after going around to the other road, began a fresh drive with his dogs. Within half an hour I heard a shot and this was followed by a blast on an ox horn. We knew that our friend had scored at last and followed the horn into the brush. Presently we met the veteran carrying a small buck, and returned to the road with him. He said that his intention in the morning had been to hunt gray squirrels for a physician at the hotel, who had offered to buy squirrels for a patient who was convalescing and required nourishing food. He had his long smooth-bore single-barrel gun, from which he fired small shot, buckshot or a round lead ball, as the occasion required, and on that morning had loaded with squirrel shot.

Then the dogs were offered to him by a friend, and he wished to try for a deer, but when he examined his stock of ammunition discovered that he had only four buckshot. These he rammed down on top of the charge of squirrel shot and put a wadding on them. In the last drive the dogs had started the deer (which was lying down), only a few yards from him, in very thick brush. They were right on top of the buck and he did not dare to shoot until the animal had run possibly forty yards. Then he fired and put just one buckshot in the back of his head. It was probably a scratch or chance shot, but I was astonished that his common rifle powder had force enough to carry two charges of shot with enough power to drive one of the buckshot into the deer's brain. However, he had his buck and was satisfied. Another gun and myself idled along the road for some time, and when we arrived at the hotel we saw the mountaineer dressing the deer outside the gate. He said that he had sold his prize to the manager for the use of the guests, and tendered to each one of

us a pro rata share of the amount received. He said that the skin belonged to first blood, the first shot that touched a deer and brought blood; but we all shared equally in the amount realized from the sale of the dressed carcass. I do not think that anyone accepted this offer—I sincerely trust not, as these people are pitifully poor in this world's goods.

These mountaineers are a fine folk, honest as the day and hospitable if they know you, but their poverty is extreme. They raise a little corn and potatoes (not sure about the potatoes), shoot and fish; but how they feed and generally support a family throughout the year is a mystery to me. Game is not plentiful, a few ruffed grouse, rabbits, squirrels and in some parts woodcock may be found. Deer were to be found at that time in small numbers.

This was proved when a party of wealthy men staying at the hotel sent to Lynchburg for one of the finest packs of hounds in the State of Virginia. We expected great success but not more than three deer were killed in all drives during the last week of our stay. It was exciting to hear such a pack in full cry as the hounds numbered eighteen; and fairly made those old mountains ring when running a deer. They made just as much noise when they become discouraged and took after a rabbit, but, deer or no deer, it certainly was great fun.

New York. THEODORE GORDON.

A Change Needed in Some British Columbia Laws

Editor Outdoor Life:—The sportsmen here (Victoria, B. C.), are very dissatisfied with the way the season opens this year. Deer only on Sept 1st, grouse on Sept. 15th, and pheasants and quail on Oct. 1st. Result: All are after deer on the 1st; then they make a drive at the birds on the 15th and 1st, with the result that the respective varieties get the full force of the drive, whereas if they all opened together some would go for birds, some for deer, and some in the farm country for pheasants and quail; easier on the game and less dangerous to the hunters. And to cap it all, they allow the sale of deer meat, which means that every Indian on the reservations will be out pot-hunting for the market. No check is kept on how many deer a man kills (the law allows three) and the deer will sure "get it in the neck." I, together with most other sportsmen, are against the sale of deer meat, which goes to the more expensive hotels and restaurants and to the richer residents who are able to afford to buy the game but are too lazy to hunt for it.

The Province has passed laws prohibiting the use of automatic and pump shotguns, and then allows deer meat to be sold. Is that consistent? We have many good and wise game laws here; they are not all bad, by a long shot, but this particular order-in-council is not thought to be a wise move, if the best interests of the game, the nunters and the hunters of future generations are to be considered. The deer are disappearing fast enough as it is.

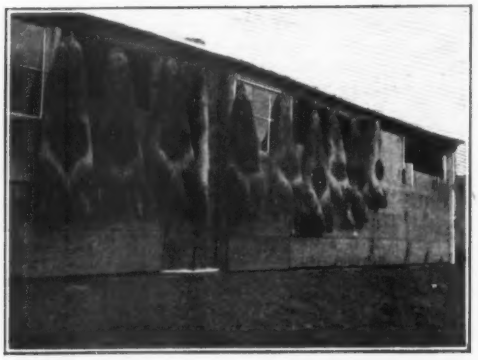
British Columbia. J. B. TIGHE.

The very foundation stone of game protection is shaken when protected (?) game is allowed to be sold. What on earth is the use of protecting (!) it and then sell it to hotels and restaurants? Why provide closed seasons, bag limits and other restrictions? There is no commonwealth on the continent deserving the name which allows its treasury to be rifled, its timber to be ruthlessly burned or its wild game to be sold on the open market. British Columbia is too fair a star in our northern firmament to allow this stain to long remain on her name. Let us hope that it will be removed at the earliest possible moment. Her wild life (that most precious asset of her natural wonders) will soon perish from her forests if this law is to be allowed to continue long.—Editor.

Facts Regarding The Wolverine

Editor Outdoor Life:—There is probably no animal about which so much interest and mystery attaches as the wolverine. They are found in fairly plentiful numbers on the Alaska Peninsula, where I have spent so many years of my life. A full-grown wolverine will weigh from fifty to sixty pounds. They are built on the order of, and at a distance resemble, a bear cub, with feet about as large, but more round. They are all shades of color from a light brown to a coal black, with a lighter-colored stripe the full length of the body and on each side of the body. They have a short, dark-colored bushy tail and a short, wide head and powerful jaws with a crushing power sufficient to grind up the leg bones of a full-grown caribou. They have a keen range of vision, wonderful scenting power and a sense of hearing that gives the wolverine ample protection from his enemy, man, as well as his natural enemy, the big brown bear.

As a mountain climber there is nothing that walks on four feet that can beat him, not even his big brother, "Ursus gyas."



Ten wolverine skins caught in the author's trap last winter.

They have a peculiar lope that is tireless, which they will keep up for hours, up hill and down and across flats, stopping a moment about every ten minutes to look about. Should they be surprised, they will sit up on their hind feet and take a look; then they are off, and they can run fast for the first mile. They catch ptarmigan, rabbits, porcupines, ground squirrels and occasionally a fox or a young caribou. Should they find the carcass of a full-grown caribou they will gnaw off a hind quarter and carry it off into an alder patch, where they can eat it at their leisure without fear of being disturbed by any wandering bear that might be attracted by the scent of the dead animal.

They dig a den in the side of some cañon and raise their young, from two to four, about the 1st of June.

Wolverines have a bad record, as they are accused of following up trap lines and systematically robbing the traps of any fur-bearing animals, rabbits or birds that might be caught in them; and so they will. In this way the trapper saves them the trouble of catching them for themselves. When a wolverine fights another animal, wolf or dog, he lies on his back and rips with his hind feet and claws, while he holds the animal close to him with his claw-armed front feet, and once they get a hold with their teeth, their dental formation is so arranged, coupled with their jaw leverage, that they are strong enough to crush any bone that they can get in their mouth. In a fight to a finish with a wolf or a dog, I would pick the wolverine to win every time.

With a No. 4 or wolf trap properly set and baited, they can be caught and held; but they will cut up into stove wood (with their teeth) every bit of alder brush within their reach. I caught ten in my traps last winter, and enclose film showing the skins.

Alaska. L. L. BALES.

Wild Life Protection in Our National Forests

Editor Outdoor Life:—The mention made in September Outdoor Life under the title "A New Force for Wild Life Protection," pertaining to the enactment of a federal law to establish a large number of refuges for wild life in the national forests, should attract the attention of everybody who is at all interested in seeing the conservation of game put upon a substantial basis.

The national forests of the Rocky Mountain and Pacific Coast regions for the most part are the homes of big game and certain game birds of those regions. An attempt to create refuges for this wild life in suitable parts of national forests, places where game will at no time be molested but will be allowed to increase and spread to adjoining lands, is an action not only logical but of actual necessity, the need of which is each year becoming more evident. The good results apparent, from refuges that have already been established, show conclusively that this method for protection is the most suitable and efficient, and apparently a number of refuges of not too large size seems preferable to a few of large size.

That big game is becoming extinct in many parts of the west is well known. Remote places that ten years ago were considered "good game country" are now spoken of in the light of what was formerly there and not of what is to be found there at present. This disappearance of game is largely due to the settling up of the country (the immigration of people to the West has meant rapid increase of population and an increased number of hunters there) and again to the fact that in many localities when snow is on the ground, game is simply hunted down. The use of grazing areas by sheep, horses or cattle in some parts of the West that were formerly feeding grounds of big game, is another cause for the disappearance of game. There is no better big game hunting than that which is found in the vicinity of Yellowstone Park (the wild animals have a refuge there where they may roam unmolested by hunters). Still, the number of these animals that pass out of that refuge each year is sufficient to attract hunters from almost everywhere to that vicinity annually.

The idea of creating game refuges in suitable parts of the national forests is, as we know, not a recent one, and legislation both national and state to provide game refuges of one kind or another has been attempted for at least twenty years. The right kind

of co-operation between states and national interests in using national forests for this purpose will make this move recognized as something really worth while in game conservation; in the West its accomplishment would undoubtedly mean the greatest thing that could happen for game protection. Sportsmen individually and collectively should lend their aid toward securing enactment of the proposed bill and keep track of this move until after action on the bill by Congress during the coming session.

Montana. T. G. LANGGUTH.

The Unmerciful Slaughter of Bears in Idaho

Editor Outdoor Life:—Please find enclosed clipping from an Idaho newspaper, showing how the bears are being destroyed in this state. Eighty per cent of the bears' food this time of year (August) is ants and insects, and there are a lot of lawless men and dogs following them up and killing the mother bears and babies for the miserable $10 bounty placed on them by an ignorant Legislature and signed by the same kind of a governor. C. S. DAVIS.

Idaho.

The clipping:

So far as the state veterinarian's office can tell from an investigation of available data, all records for the slaughter of coyotes during any one period were broken from June 15 to July 17, 1915, when 1,162 coyotes were killed. Carcasses of that many were presented for collection of the bounty offered by the state under the predatory animal law passed by the last session of the Legislature. Other predatory animals on which the bounty was allowed were as follows: Wildcats, 56; BEARS, 124; lynx, 11; wolves, 3. The bounties allowed are as follows: Coyotes, $2.50; wildcats, $2.50; bear, $10.00; lynx, $2.50; wolves, $10.00. For the animals killed during the period mentioned the bounties totaled $4,342.50.

It is a blot on the otherwise fair name of Idaho that such a bounty law should exist in that state. When seventy-five per cent of the members of five of our western Legislatures voted last winter to protect bears and place them in the same class with deer and elk, thereby recognizing them as game animals and not predatory animals, we think that the State of Idaho should bow her head in shame over the disgraceful bear bounty bill passed by her Assembly and signed by a governor who ought to know better.—Editor.

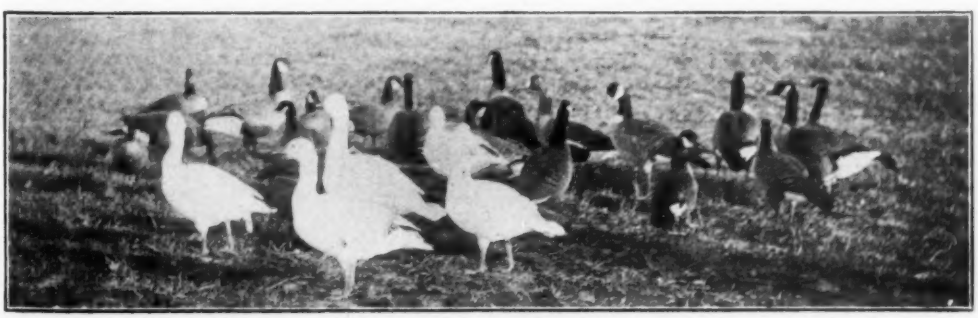
Goose Shooting Where the Birds Are Considered a Pest

"Hello; yes; they are; well I guess so; I am pretty busy in the office, but I can steal a half day for that. All right, I'll be over at 4; good-bye."

The above conversation took place over my 'phone, one evening last fall, between my friend, Tom Ajax, the great goose hunter (who put the "goo" in goose), and myself, about a goose shoot the next morning, on the stubble fields a few miles east of here (Willows, Glenn Co.). As it was then 9:30 I set my alarm clock for a quarter of 4 and went to bed to dream of geese as big as elephants. It seemed to me that I was hardly in bed before the clock was trying to wake up the entire neighborhood. Jumping up, I was soon dressed, and going across the street to Ajax's house I found him up and breakfast ready, and we certainly did justice to the ham and eggs, hot cakes, biscuits and coffee, that Mrs. A. had cooked for us, for she is a good sport and always insists on getting up and cooking breakfast. It is never too cold or too early for her.

After breakfast, we put the live decoys in their coop, hitched up the team, Scanlus and Shorty, and were off for the shooting grounds three miles away.

Arriving just at daybreak we found the pits that Ajax had dug the day before; they



Live wild geese decoys.

Live decoys and dead birds stooled out.

were 26 inches across the top, three feet deep and hollowed out into quite a good-sized hole inside, with a small opening. He had hauled all the dirt away, and the holes were hard to see until you were right on top of them. We unloaded the decoys, putting twenty of them in a square 16x16 of very light net 2 feet high about 30 yards south of us, and the balance about the same distance north. While I drove the team over to a fence a quarter of a mile away, Tom arranged the six canvas decoys around each hole and the twenty birds that he had killed the night before were put up on wire staples with their heads down as tho they were feeding. The sun was just coming up when I got back—and the first bunch of geese in sight, away south of us.

We were soon in our pits with his Remington pump and my automatic ready for them. They were going to pass east of us but Tom's "Aluc! Aluc! Aluc" attracted their attention and they set their wings and came right in. At about 20 yards he yelled "Punch them!" and then it was each fellow for himself, he taking the front birds and I the back. Tom accounted for six with four shots and I seven with my five, our loads of 3½ drams E. C. and 1 ounce of No. 6 chilled doing great execution, and having lots of penetration, which is necessary as the birds are all well-feathered and they offer lots of resistance. In a minute we had them stooled out on wires and were ready for the next bunch, which were six greys. We stopped five of them.

The flight had now commenced and there was a solid string of geese as far south as you could see and we knew that we were in for a big shoot. Several small brant came in and we let them alight as a big bunch was starting to work. When they were in range we raised up and gave them the surprise of their lives, and they left eleven behind them, one of which was only wing-tipped. I had a fine foot-race to catch him. When I got back there were birds everywhere, and so they came in singles, doubles, big and little bunches; some we missed, but the majority we added to our pile and at 9:30 we were out of shells, and picked up 290 birds.

This was a much better shoot than we usually have. We just happened to be in the right place; a slight wind was blowing and the birds worked perfectly. Perhaps on the very next day we should not get 20, altho Ajax, shooting about five days a week all season, averages 100 birds a day.

All of the big ranches here have men hired, who work in shifts of eight hours night and day, riding around and shooting at the geese with rifles to keep them off the young grain, as one cannot imagine the damage a large flock will do. If any brother sportsman who wants a shoot like the above will write to Thomas Ajax, Willows, Calif., I am sure he will be glad to take them out, and I can recommend him as the champion goose caller of the Sacramento Valley.

DR. A. P. DEACON.

California.

What's the Use of High-Power Rifles, When a Hoe Will Answer the Purpose?

One of our readers was good enough recently to send us a newspaper clipping telling of the killing of a bear by a woman with no more formidable weapon than a hoe We replied in a dubious vein, and by return mail received the following letter and photograph from the slayer herself—and now we solemnly withdraw all charges of "fake" and silently fade from the field of battle, never more to attack the veracity of a woman:

Editor Outdoor Life:—Mr. J. W. Evans of Portland, Ore., sent me the letter you wrote him in regard to me killing a bear. The Oregonian story was correct and not exaggerated one bit, and the bear was not sick or wounded, as anybody can tell by the perfect condition of the fur. But I want you to understand it was only a half-grown bear, but when he reared up at me he was almost as tall as I. I was working in my garden (at Welcher, Ore.), hoeing, when the woman at the next place came over and told me there had been a bear in her yard and that her husband had gone to the neighbor's after a gun and dog. Well, while we

Mrs. Pierce and skin of bear killed by her with a hoe.

were standing there, she on one side of the fence and me on the other side, we heard the chickens making an awful noise. I dropped the hoe and ran to see what was the matter. It was the bear, all right, and when he saw me he made straight for me. The woman called for me to run, but there was nothing left for me to do but stand my ground, so I ran back and got the hoe and said, "I'll do my best, but if you see I'm getting the worst of it, help me." I always have been an outdoor woman and am very strong, altho I am quite small. I have killed many hogs and knew just where to strike to kill, so I raised the hoe and braced myself and waited for the bear to come right to me. When he got almost to me he reared right up; then I struck him between the eye and the ear—just where I aimed for. He tumbled on his nose. The first hit was no accident, but when he raised up again I hit him right in the same spot; that was an accident, as by that time I was getting a little nervous. But I never moved. He fell again; then the third time he tried to rise I hit him again, not an eighth of an inch from the first hit. He fell and never came up again, so I played the drum on his head until I was sure he was dead. Then the woman and I dragged him to the house before the man came back with the gun. I haven't gone into details, but this is the story of how I killed the bear with the hoe. The hoe had a short handle and a strong one; I had made it myself. I killed the bear the 6th of last March. I am 71 years old. Inclosed see picture.

Oregon. MRS. E. A. PIERCE.

Hunting by Moonlight With Telescope Sight

Hunting coyotes by moonlight with a telescope sight is a new experience and some sport. On the 15th of June last, it being so hot in the valley, we decided to go back in the mountains where it was cool. After getting there and becoming tired of waiting for the deer season to open, I started out after coyotes, but the coyotes in the mountains do their prowling at night and we had no success in the daytime. One evening the brightness of the moonlight gave me an idea and I started out with a .25-35 Winchester and 15-power telescope sight. I hunted from 8 until 11 o'clock and killed two coyotes and one bobcat. I found no trouble in seeing the coyotes thru the glass, and the needle sight showed quite plain, in fact so plain I could keep it on an 8" circle of white paper at 100 yards. I saw a spike buck feeding on a ridge, 200 yards away, and could easily have killed him. I looked thru the glass at him and could keep the needle on his shoulders at least three or four seconds without wavering. This is some sport, but makes one sleepy the next day.

California. C. E. SMITH.

The Weights of Our Largest Bears

Editor Outdoor Life:—From time to time I have noticed in your magazine articles pertaining to the size of grizzly bears. The following information is found in "The History of Wyoming," by George Coutant, the best and most authentic history we have of this state.

Accompanying the Powder River Indian expedition which left Fort Laramie July 30, 1865, was Captain H. E. Palmer, who kept a diary from the day they left until their return, and in the absence of any report ever being made of the expedition by General Conner, Captain Palmer's diary has been accepted as a true record of that expedition:

"We left Crazy Woman's Fork August 23, 1865, at 6 a. m., and camped fourteen miles north about 3 p. m. The General (Conner) and a few of his staff officers, including myself, went up the stream some three miles to a high mesa, where we got a beautiful view of the country, when all at once we ran onto a monstrous grizzly who took

refuge in a plum thicket covering about an acre of ground. One of our party (Trainmaster Wheeling), rode up closer than the rest of us cared to go. The bear would rush out at him, snapping and growling, while we would fire on him with our Sharps rifles.

"When we downed the grizzly we found twenty-three bullet holes. The animal was one of the largest of its species. We agreed that it would weigh about eighteen hundred (1,800) pounds."

This seems an enormous weight for any bear to attain, but there is still living in this town a man who was stationed at old Fort Laramie as early as 1856 and who has continuously resided here in Wyoming since, who was acquainted with most of the officers and many of the men who made the above referred to expedition. He says: "I was in the Big Horn Mountains first in 1858-59. We met some grizzlies of great size, but none as large as Captain Palmer tells about by 400 or 500 pounds. Nevertheless I believe Captain Palmer and companions were somewhere near being correct as to weight of their bear. I know them to be men capable of estimating the weight from a great amount of former experience."

Now, Mr. Editor, I admit this may appear to be an unreasonable size, but I have talked with a great many old-time hunters and none will say "it's unreasonable."

I don't believe the facts as herein set forth would be sufficient to relieve Dr. Anderson of his "laurels," but personally I have no doubt but that in the early history of the Big Horns, bears were found which were far larger than any found during the last twenty years.

I have no special desire to see this in print, altho should you ask me for a short story sometime I would not refuse. I look for and expect your magazine as I do my daily paper.

Wyoming. FRED P. ALLEN.

Note.—Judging from our experiences in the hills covering the killing of many animals, we should say that no accurate reliance can be placed on the estimated weights of wild animals. While the weight of Dr. Anderson's big bear was estimated yet the manner in which it was estimated gives us a more perfect means of arriving at the approximate weight of the animal than by the ordinary estimates obtained merely by viewing the carcass.

While it may be possible that such a large grizzly as that mentioned, weighing 1,800 pounds, roamed the wilds of Wyoming in 1865, yet we doubt it exceedingly. One of the largest bears ever killed in Colorado —Old Mose—had a hide that measured 10 feet from tip of nose to tip of tail and 9 feet 6 inches across the shoulders, without stretching (we measured it personally at the tanner's); from tip to tip of ears across the head it measured (hide measure) 18 in.; length of ear, 5 in.; width of front foot, 8 in. W. H. Pigg, who accompanied J. W. Anthony when he killed Old Mose, told us that the big bear weighed 797 lbs., hog-dressed, on the stock scales at the Stirrup ranch (owned then by Pigg) the next day after he was killed. As hog-dressing an animal reduces its weight about one-fifth to one-fourth, about 180 lbs. could be added to the hog-dressed weight, making Old Mose weigh about 977 lbs. alive. He was killed after hibernating, and it is safe to say that a couple of months later in the season this old plantigrade would have weighed 1,050 or 1,100 lbs., and by denning-up time in the fall possibly a little more.

In a letter from Reginald L. Ditmars of the New York Zoological Park, dated Sept. 2, 1915, he says: "I am unable to give you the true weights of our largest bears, as we have not weighed them, but approximately would say that our largest brown bear (Alaskan) weighs about 1,000 lbs. I would estimate the weight of our largest grizzly at about 700 lbs."—Editor.

An Old Sportsman Writes on Bear Protection

Editor Outdoor Life:—I cannot recall that anything has given me more pleasure than the receipt of your letter of the 14th inst. and the copy of your bear bill, with which I am most heartily in full accord.

For the past twelve years I have been doing missionary work in California, Oregon and Washington (and to a less extent in Colorado) amongst the backwoodsmen, ranchers, hunters and guides, endeavoring to persuade them to stop the extremely cruel trapping of bear and to quit their wholesale slaughter for sport or from mercenary motives.

I have explained to them that this harmless, interesting and curious animal will soon cease to be a part of the landscape except in the Yellowstone Park, where protected, and where they more than divide popularity with the geysers.

I first took this matter up years ago, at the time being solely actuated by the desire to protect these animals from excruciating suffering, and, later on, from personal observation and correspondence with humane and sensible guides and others, knowing the large numbers of bears killed for their hides, I became a strong advocate of their protection from the aesthetic point of view, that is, their preservation as a most interesting and lovable wild species.

I have seen bears in traps where they

have suffered for hours, and in several cases indefinitely longer periods; and may the good Lord deliver me from ever witnessing such a sight again!

I am most heartily in sympathy with all those letters in the January (1915) Outdoor Life so far as they urge protection as to season and bag limit. I most sincerely and emphatically condemn the use of traps, deadfalls, snares or pens at any time, season or place.

You did a good act in a naughty world Mr. McGuire, in becoming the author of that bill, and every right-thinking man and woman in the United States should support you in every possible way and force the bill thru the Legislatures of all those states where the bear has a habitat.

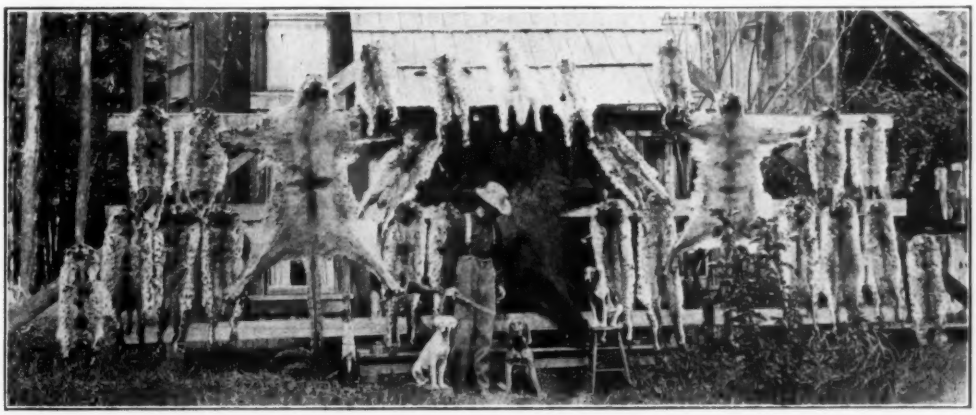
After reading the able letters in the January number it would be presumption in me to attempt to add anything thereto.

California. CHARLES A. CLARKE.

Predatory Animal Hunting in Oregon

Editor Outdoor Life:—I enclose a photograph of Mr. H. G. Hayes, an ex-forest ranger and professional guide of McKenzie Bridge, Ore., together with his dogs, and hides which he took during January and February, 1915. You will note that there are two cougar hides, twenty-two wildcat hides, one wolf hide and one bear hide. Seven of the cats, the wolf and the cougar were killed by Mr. Hayes single-handed in a three days' hunting trip. The bear was killed in his den in February.

McKenzie Bridge is fifty miles east of Eugene, Ore., in the Cascade Mountains. It is reached by a very good automobile road over which there is operated a daily stage. Hunting in that country is very general, tho most of the longer trips are made between McKenzie Bridge and the Three Sisters, a group of snow-capped peaks with which you are no doubt familiar.



The January and February kill of an Oregon guide.

Oregon. S. D. HOOPER.

Bear Cubs Should Never Be Killed

Editor Outdoor Life:—I have read with much interest the numerous articles in your magazine on the protection of bears. I have always thought that bears should be protected by an open and closed season on them, the same as on any other big game. Have been tempted to write you many times and express my opinion on this subject, but have neglected doing so until today (Aug. 25, 1915).

This forenoon a man called at my shop with nine bearskins (I am a taxidermist). Two of them were two-year-olds and the balance (seven) were cubs, all this year's. I asked when he killed them, and he informed me that they were all killed in July by himself and four companions while on a camping and fishing trip in the mountains. These skins were absolutely worthless, and a few of the cubs were fair. This is just one case. There have been many such cases brought to my attention and I'll venture to say that there are many taxidermists who can say the same thing. I have had over a dozen skins brought in during the last two months to be made into rugs

that didn't have enough hair on them to dust a fiddle with.

I think it is time right now for this state and all others to get busy and protect the bears. Cubs should not be allowed to be killed at any time. There are very few around here who go on a strictly bear hunt. Most of the bears are killed by campers and sheepherders. I have questioned many of the sheepmen and have never yet found one who actually saw a bear kill a sheep, but they have found dead sheep and killed bear in the same vicinity—and, naturally the bear gets the blame for it, while in reality the sheep were killed by the cunning coyote.

In regard to catching bears in traps, this is the most inhumane way of killing bears that I know of. I have known of a bear being in a trap for five days; this information I got from the trapper himself and he took it as an everyday occurrence. I hope the day will not be far distant when there will be an open and closed season on bears and that the day of the bear trap will be no more. A. S. HARMER.

Washington.

A Montana Grizzly

Editor Outdoor Life:—I enclose photo of grizzly killed with the .250-3000 Savage, which I had the pleasure of trying out, and for the benefit of the readers of Outdoor Life I want to say that the .250-3000 Savage will kill grizzly bear as dead as any need be. I hit this one a quartering shot in the neck, the bullet lodging between the shoulders, and the bear never moved out of his tracks; he fell like a beef. The dogs held this bear three hours and had handled him pretty roughly. They had his hindquarters pretty well bloodshot when I killed him. He was a fine specimen.

Old Eph on his funeral car.

I like the .250-3000 better than the .22 high-power, and you know I had good success with this gun. STEVE ELKINS.

Montana.

An Albino Fawn

Editor Outdoor Life:—I enclose photo of a white fawn which was captured June 30, 1915, at Fish Creek, the government headquarters here in Glacier Park, Mont. The deer is normal in every respect except color.

White fawn caught in Glacier Natianal Park June 30, 1915. Photo by author.

It was placed in a low pen from which it escaped, and is now enjoying itself as all young deer should. It is of the white-tail species. I tried to get a picture of it standing, but it pretended to be asleep.

Montana. CHAS. E. SHAFFER, Jr.

Twins in the Elk Family

Editor Outdoor Life:—I understand that most good authorities upon the subject of elk will not discuss the matter of whether or not a cow elk is apt to have twins. This month (August) I just returned from fine elk country, where our party saw an abundance of game. I thought I had the question settled, for we found a big cow and two calves feeding alone in one of their parks. I felt sure they were her own, but a while later found three calves to be following the very same cow. The question in mind is still unsettled.

A friend of mine who has been in the guiding business for the last twelve years

will not discuss the matter, for he says it is no subject for him when he is uncertain himself. Can you give me any help or particulars? ROBERT M. HILL.

Washington.

Answer.—We have never heard of an elk dropping more than one calf a year. Sometimes it may occur that a cow will have two, but we think that this would be very rare indeed.—Editor.

Game Notes

R. M. Burnes, a prominent sportsman of Massachusetts, paid us a visit during the past month while returning home from a two weeks' hunting trip in western Wyoming on one of the tributaries of the Snake. Mr. Burnes left the railroad at Idaho Falls, Ida., and crossed the line into Wyoming, a two-day trip to permanent camp. He was very successful, securing a six-point elk, a seven-point elk and a 16-inch ram.

The California Fish and Game Commission has posted and caused to be published broadcast the following notice: "The California Fish and Game Commission will not recognize any receipt for money paid in lieu of any hunting or fishing license. All persons holding such receipts must procure legal licenses or they will be liable to arrest."

Writes E. L. Martin of Helena, Mont.: "I am a devoted reader of your magazine and can truthfully say that in my opinion it is the best and most comprehensive magazine of its kind on the market. I was especially interested in your agitation for the protection of bears. I am very fond of hunting and rarely miss a season that I do not get out for at least a few days. On one occasion I was treed by an old brown bear with a cub. I had presence of mind enough to take my gun up the tree with me and killed her with one shot between the eyes, but the cub took to the brush before I could get a shot at him. As you know, our last Legislature nearly succeeded in passing a measure protecting the bears in this state, and our state game warden, Mr. De Hart, is very strongly in favor of such a measure."

California reports to the state comptroller indicate that the huntsmen of the northern counties of the state have practically exterminated the mountain lions. During the month of August only four mountain lions were killed in California as against close upon 200 for the same period a decade ago. Indications are that efforts of stockraisers during the past quarter of a century have resulted in the practical extinction of the animal. Bounties have been paid upon 22,000 mountain lions in the past 25 years in California.

More than 240 new game laws were enacted during 1915—a larger number than in any previous year except 1911, according to Farmers' Bulletin 692, "Game Laws for 1915." Forty-three states held regular legislative sessions and in all of these states except Arizona, Georgia and Nebraska some changes were made in the statutes protecting game.

A BUNCH OF WHITE SHEEP, KENAI PENINSULA, ALASKA.

The ewes and lambs of the Ovis Dalli are found in summer on the beautiful mesas and tablelands where their favorite browse is found in abundance, and where, from a prominent lookout, they can see danger for great distances.

THE MIXED-BAG

Cost of an Auto Camping Tour

During the past summer our California deer hunting contributor, C. H. Stoddard of San Mateo, Calif., drove his Ford touring car to Denver and return, via San Diego, and the Southern route, returning via Colorado Springs, Leadville and Salt Lake (total milage, 4,300). Mr. Stoddard had in his party his wife, mother, and three boys, aged 14, 12 and 3 years. He also carried all camping duffle necessary, bedding, tarp, cooking utensils, camp table, guns, etc. At the conclusion of his trip we wrote him asking for data on the cost of the trip, consumption of fuel, etc., and received a letter from which we extract the following:

"Regarding expenses en route: I was very heavily loaded, as you know (probably 1,000 lbs. total), and went over some bad roads. I bought an entire set of Kelly Springfield casings en route, receiving $14.00 credit for two old ones which needed re-treading but which I had not the time to spare to have done. It was possible therefore to have made the trip on a smaller tire cost than I did. I did not try to economize on anything.

I broke two front springs and one rear spring and replaced them en route, $19.00; then as you know had the machine gone over at the Denver Ford branch while there—a $34.00 job.

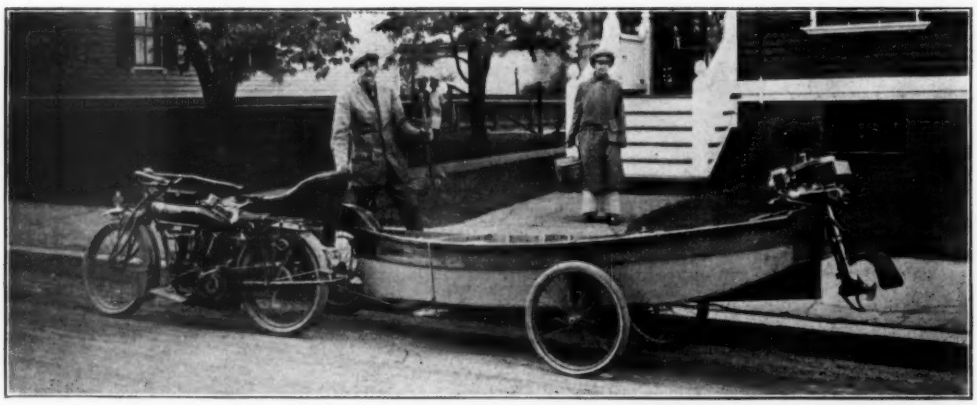
I burned 259 gallons gasoline and 37 quarts of oil paying from 10 cents to 40 cents for the gas and 20 cents to 35 cents per quart for the oil.

I spent on tires	$60.00
Repairs to car	60.00
Gasoline and oil	60.00
Food	60.00
Non-essentials	60.00
Total	$300.00

We took five weeks to reach Denver (2,700 miles) spent much time en route, and two weeks on road from Denver to San Francisco (1,600 miles.)"

Land or Water All the Same to This Man

Editor Outdoor Life:—One of the most curious mediums of transportation in these days of getting back to nature vehicles is that devised by B. A. Swenson, an enthusiastic angler and motorcyclist of Providence, R. I. By "hitching" his motorcycle to the bow of a small dory mounted upon a two-wheeled carriage in much the same way that the Deacon's rat-tailed, ewe-necked bay was attached to the famous one-hoss shay, Mr. Swenson and his family hie away to the most distant parts of the state for an afternoon off with the fish without ever stopping to inquire beforehand whether the



An angler's ingenious invention. Carrying his boat with him on his trips.

pond or lake selected lies close to the car line or whether there may be boats to let to chance fishermen and other pleasure seekers.

Borrowing his idea from house painters who trail their ladders thru the streets upon two-wheeled carriages, Mr. Swenson attached two regulation motorcycle wheels to an axle. Upon these he placed a light frame equipped with shock absorbers and carrying a cradle for a skiff. Last winter from his own design he had a light boat built. The craft is 12 feet long by nearly 4 feet wide amidships and is sufficiently roomy to provide accommodations for the entire family.

The boat is equipped with a small outboard motor mounted upon the stern. This mechanism has sufficient power to send the skiff along at 12 miles an hour. While being dragged over the highways a temporary frame is attached to the bow and by a swivel joint to the frame of the side car.

Rhode Island. C. F. SANDERSON.

The Dr. Breck Fly-Dope

Editor Outdoor Life:—"Touchin' on an' appertainin' to" your kind words in praise of my fly-mixture, I make bold to suggest a variation for hot weather, which I have practically adopted for general use. It is the substitution of carbolated vaseline for sweet oil as a base. This means that the dope takes solid form and hence does not disappear so quickly, especially in hot weather. Furthermore it is not subject to running out of the bottle, because it is carried in tubes like those for vaseline. Such tubes, of various sizes, can be bought in any city, and the dope is put in them. This to me is a decided improvement, and I recommend the solid dope to all old and new friends.

I am glad to see that you are still hot after the users of that outrageous implement, the steel trap. More power to your humane pen! EDWARD BRECK.

Nova Scotia.

DR. EDWARD BRECK, NATURALIST.

Taken by Albert Bigelow Paine, of "Tent Dwellers," at Paine's bungalow.

Some Queries on Snake Bites

Editor Outdoor Life:—I would be very much obliged if you would answer a few questions on rattlesnakes: (1) I would like to know if it is true that a rattler will not cross a hair rope; (2) If whiskey is good for a snakebite; (3) What is the best way to cure a bite if you are out in the prairie by yourself a good distance from the nearest house; (4) Are rattlesnakes asleep in the afternoon? GEORGE LEWIS.

Colorado.

Answer.—We have always heard that a rattler will not cross a hair rope, but how true this is we cannot say. We believe whiskey is good for a rattlesnake bite inso far as it carries your vitality over a certain crisis. Of course, all rattlesnake bites are not necessarily fatal. The best way to cure a rattlesnake bite if you are on the prairie or any place else away from assistance is as follows: Slash a cross in the bite with your knife so the blood will run freely. Then place a ligature above the bite, tightening it and keeping it so for ten or fifteen minutes. Then release the ligature just long enough to let the blood circulate into the body from the limb affected. After doing so tighten the ligature again, and keep it so tightened for ten to fifteen minutes. This process should be kept up until the crisis has passed. The idea is the same as taking a big drink of whiskey at once. If you take a pint of whiskey at one time it will kill you, depending of course upon the condition of your system, but if you absorb a mouthful or a tablespoonful of it every half hour or so, and finally drink the whole pint, you can do so with not nearly so bad results as if you drink it all at once. Care, of course, should be exercised in using the ligature not to keep it on long enough to let the limb go "dead." But fif-

teen minutes at a time is safe, as many times surgeons shut off the circulation in this manner for an hour. We do not know that rattlesnakes are asleep in the afternoon any more than they are in the morning. We have heard that rattlers do not come out in the night, but just the same we have known of them being killed in the night, and therefore, especially in a warm country, we would always be on the lookout for them, even at night, providing they are plentiful in the vicinity.

Lumbermen's Rubbers as Hunting Shoes

Editor Outdoor Life:—Referring to an article in your September issue entitled "A Novel Idea Advanced on Hunting Footgear," I would like to make a suggestion in regard to footgear for hunting that might be of some benefit to readers of Outdoor Life. Take a pair of ordinary lumbermen's low rubbers, tops six to nine inches high. The last pair I used had tops about eight inches with five lace holes. Nail a piece of leather on the soles, letting it come down on the shank close to the heel. Use flathead copper nails not less than ¾-inch long, so they will clinch on the inside, spaced 1½ inches will do. Drive in three rows of cone-head Hungarian nails spaced about 1 inch apart. Use the same nails in the heels, or screw calks. The leather should be soft and pliable and not very thick so it will bend easily and the snow will not stick to them at all. Leather-top rubbers do not work well in soft, wet snow; the snow sticks to the leather, melts and goes thru. The all-rubber shoe is much the best. Shoes should be large enough to use at least two pairs of wool sox. In wet grass and brush the trouser leg should be worn outside the shoe. In deep snow the trouser leg can be tied at the bottom as low down on the shoe as possible.

The writer has used rubber shoes fixed in this manner on several hunting trips in Montana and elsewhere and found them the only shoe he could walk in all day in wet snow and have dry feet at night.

Washington. BYE STANDER.

A GNAT-PROOF TENT.

Cut shows one of these tents pitched in the Yukon territory. It is manufactured by D. Abercrombie, 311 Broadway, New York. Photo by C. T. Summerson.

Concerning the Big Six-Guns and Particularly the .44-40

By Ashley A. Haines.

For several months I have been intending to write something concerning the .44-40 Winchester rifle cartridge as a revolver cartridge. While this article will consider this subject to a small extent, at the same time, due to remarks made by Mr. Thomas in his recent exceptionally interesting articles concerning his and Mr. McCutcheon's rapid fire experiences with the big six-shooters, various of the other big guns will be mentioned as well.

To one whose shooting experience began when a mere youngster of ten, and who has acquired the little he knows about firearms with little help from others in the various localities he has at times sojourned in, it does seem strange that manufacturers have practically nothing to say concerning the proper method of manipulating their arms; and especially does this seem strange when I consider the lack of knowledge generally to be found among the average shooters concerning this matter and how very much appreciated pointers would have been to the writer had some one years ago been at hand to have started him on the right road instead of having to grope in the dark, as it were, for years before even getting in sight of the essentials that make for the ready and quick manipulation of the various fire arms in common use. And this information firearm manufacturers, strange as it may appear, have withheld, though it could have been included in their catalogues and scattered to tens of thousands, certainly proving as interesting as much of the matter appearing therein which practically concerns little more than a meagre description of their various arms and their mechanical features.

Let's see what the Winchester people have to say concerning the method of operating their '73 model rifle, the oldest model they now manufacture and one still able to hold its own in rapid fire with any lever gun using same cartridges that has appeared since—and the '73 model, you know, came out away back there something over forty years ago. The old .44 rim-fire Henry rifle, and the '66 model Winchester which succeeded it, had certainly not at that time become universally enough used for all to become familiar with them. Considering this fact, and the further fact that there are thousands of shooters today who do not know the first principle concerning the correct method of operating a lever gun rapidly, and this in spite of the fact that lever guns have been so long in use, does it not seem strange that "The operation of loading is easily executed while the gun is at the hip, or at the shoulder," should be all the information the seeker after knowledge will find, or has ever been able to find, in the Winchester catalogue concerning the proper method of manipulating a rifle that has been sent to all parts of the earth by the thousands and tens of thousands? On second thought, it does strike me that the Winchester people do have something to say about the operation of their '86 and '95 models. Of the first we read the following: "Only a short movement of the finger lever is required to load this gun, which makes it easy to fire rapidly while the gun is at the shoulder." Quoting a part of a sentence concerning the '95 model and we have all that you will find in the exceptionally complete Winchester catalogue touching the manipulation of these famous arms and that reads as follows: "—as a repeater, at the rate of two to three shots per second,—" Doesn't it seem more than strange? Why could they not have said, at the least, that to operate the gun rapidly it would be absolutely necessary to slip three fingers of the right hand through the loop of the lever and learn to slam that lever back and forth at lightning speed. Perhaps, and quite likely, many a beginner would have jammed a finger between the point of trigger and lever with the closing movement (I have never had this experience, however); but even so, he would have been started on the right trail and by following it far enough, in time, found himself capable of working the gun at top speed, when desired. But how does the average man handle the lever gun? My remarks are based on what I

have actually observed among the average shooters to be met with everywhere except at the big shooting events, with which I am not at all familiar—just how they handle a lever gun there I do not know; but I fancy that when Topperwein smashes four oranges with his .44 Winchester, said oranges tossed in the air together, that he doesn't have his fingers around instead of through the lever! And around the lever far too many men and boys will place the fingers when ready and rapid manipulation of the arm is an absolute impossibility!

Just a word here for the ever-ready critic who has something to say about rapid shooting filling the atmosphere full of harmless holes. Rapid manipulation of an arm doesn't necessarily imply careless or inaccurate shooting. The advantage of being able to operate the arm readily and rapidly is simply this: Some time the shooter would be able to put it to practical use. Place the first shot as carefully as you please; that's as it should be, but the shooter will not find it to his disadvantage should be make it a practice to load as quickly after firing a shot as possible. Once learned, and though the shooter may not fire a shot for months, or, possibly, years, he will find himself instinctively following the practice acquired many years before—or, in other words, he will find a loaded cartridge in the chamber of his lever gun the fractional part of a second following a shot; whether he pulls the trigger instantly, and continues to do so until the magazine is empty, perforating the surrounding landscape, all depends on the man.

But what has all this to do with revolver shooting? This might be difficult to explain, but Mr. Thomas, you know, introduced the subject of rapid fire with a revolver. Now to fire a revolver rapidly, one must be able to operate it rapidly. To know how to operate it rapidly one will have to learn. Where shall the seeker after this knowledge go for information? Fortunately there are books to be had on the subject covering this better than anything to be found, at least so far as I know, on the lever action rifle. But all do not have these books; nor, it may be argued, do all have catalogues of Colt or Smith & Wesson arms. But wait; both Colt and Smith & Wesson advertise in practically every sportsman's magazine, and I think it perfectly safe to say that 75 per cent of Outdoor Life's readers have these catalogues. From experience with practically every model Colt and Smith & Wesson revolver made I can state with every prospect of being right, that the average man purchasing his first revolver, and having no one with experience to instruct him in properly manipulating it, will not readily acquire skill with same. Therefore, should the Colt or Smith & Wesson people, manufacturers of the best, I believe, in revolvers to be found anywhere on this green earth, devote a few pages to this subject many of their patrons would rise up and call them blessed.

So far as I know there is but one single action revolver being made by the Colt people—the old reliable single action army gun—and none by the Smith & Wesson. That brings us down to hammerless and double action revolvers. Now there is absolutely no doubt but what most shooters, however inexperienced, will understand the self-cocking feature well enough to know that the trigger must be pulled and released and pulled again as long as they desire to shoot. Whether the target is struck or not will depend on their ability in this style of revolver shooting. While much might be written concerning the use of the revolver as a self-cocker, this, in my opinion, is not of such importance as to learn something of the double action arm as a single action. A hammerless revolver, of course, will have to be used as a self-cocking arm, but the double action, by the average shooter, is very seldom used other than as a single action—and some of these average shooters often have in mind a certain type of single action many of us desired years ago, but which will probably never appear. And to use it as a single action, the gun must be cocked—we know this because the Colt catalogue says so—"Cock the revolver"—their exact words; but HOW they do not state. Smith & Wesson catalogue says never a word, but I understand from some of their remarks that the gun must be cocked before it can be shot, for in their advice given under "Target Shooting" they speak of the hammer falling! And how could the hammer fall unless it had been previously cocked? Or was it used self-cocking?

Now, seriously. Why do not the manufacturers live up to their advertisements and give those in search of information something concerning the proper method of handling their arms? While the Smith & Wesson are singularly silent concerning the cocking of the revolver, the Colt company, as I have quoted above, do say: "Cock the revolver" as a preliminary to firing. But how they do not state. I presume that it is inferred that this will be done with the thumb. Just how, keeping in mind that this man we are considering has just purchased his first revolver and has the whole machine to learn from A to Z, we are not told. Usually when a man purchases a machine of any kind that can properly be called a machine, minute instructions in its use accompany it; but not so with our high-grade revolver, which is one of the most wonderful and carefully made machines in existence, and especially if it happens to be a Colt or Smith & Wesson.

Now to the point. How many are there, I wonder, whose shooting experience with the revolver, of course, began with the old single action Colt? Probably a good many thousand. Of these how many learned to cock the gun any other way than by dropping the thumb around the hammer spur and making the weight of the gun practically cock itself as it was thrown down on the target, this method of manipulation being continued as long as it was desired to continue shooting? And how many found that the gun could be fired more rapidly than it could be snapped empty? The recoil, you know, threw the muzzle up bringing the hammer back where the thumb dropped naturally around the hammer spur and the Fourth-of-July racket went merrily on. Now how many are there, one might ask, who condemned almost all other revolvers, both single and double action, simply because they had become so familiar with the old single action that they could not readily learn to handle any other revolver? From what we read several years ago when the single-double action controversy was at white heat, we know that there were many of these men. The hammer spurs were too small, or too short, the grip was all wrong and I don't know all the faults we (I was among the bunch, I believe) did saddle onto the double-action revolver. Much that we wrote was true of the double-action revolvers of that date; practically all that was written was from men who had the most honest convictions, and while I have since learned, and several times, I believe, acknowledged that we were wrong in many of our contentions, at the same time I think we can lay this to the manufacturers' door simply because they failed to slip in a little note with each revolver sent from their factories that should have read something like the following:

"To those unfamiliar in the use of revolvers of this type we suggest the following method of manipulation: Grip high on the stock; let thumb lay on thumb-latch pointing straight to the front. Cock with end of thumb. Effort to cock will swing barrel to right of target, but as hammer reaches full-cock barrel will have swung back on target again. When this method of manipulating the arm is acquired, the arm can be as readily and rapidly operated as any revolver used as a single action arm. To those accustomed to the use of the single action Colt, several objections will be raised against this new revolver. If they grip the new arm low on the stock, as will seem to them the only natural way, the hand will be so low on the grip that the position of the hand will have to be shifted after each shot to cock hammer for the succeeding one. Grip high on stock and the thumb will always be within easy reach of the hammer spur enabling the most rapid fire. With this new revolver many will find when stock is gripped high, as mentioned, that the barrel will point inches to feet above the target unless muzzle is depressed by wrist movement. This may require considerable time and practice to acquire; when learned the shooter will find it as easy to align the sights on the target as with the single action Colt; also that he will be unconscious of any tendency on his part to depress the muzzle of arm to avoid high shooting. Placing the thumb on the thumb-latch and letting it point straight to the front assists in steady holding and leaves the thumb in best position for readily reaching the hammer spur and positively prevents the latch from injuring the thumb, due to the recoil following a shot slamming the latch back against the thumb as almost invariably may be expected when thumb is turned down at rear of latch as, at first, many will place it."

And is that all that should appear on the circular that should be sent out with each revolver? No, a thousand times no! Let the circular go into details as fully as the ones that accompany each set of Ideal reloading tools concerning reloading cartridges and we will see less of the awkwardness displayed by the many shooters who require both hands to cock a revolver and, should they desire to let the hammer down, without firing, the services of ALL hands and the cook to let it down again, when with their united efforts you will feel that you would be safer in the next county with a stone wall intervening.

Because I sometimes find myself writing in the above strain, I hope that none will receive the impression that Haines considers himself the only one living who knows, or thinks he knows, everything about the revolver and its use. If charged with a crime of this nature he would have to plead "Not guilty!" This fellow A. A. H., however, has been up against so many of the difficult problems to be found in the use of the modern revolver, and knowing that there are thousands still stumbling along the same old rocky trail with little prospect of getting anywhere, that he often lets the little typewriter record some—not all, by any means—of the thoughts that will out.

Mr. Thomas in his articles on rapid fire with the revolver has introduced a subject that will prove of great interest to many, I am certain, and while I shall be unable to add anything of value based on stop-watch experience, at the same time I am tempted to make a few random remarks. As I understand it from Mr. Thomas' articles, Mr. McCutchen, World's Rapid Fire Champion with the Revolver, has not had the experience with the single-action Colt that he has had with the lighter .38 Smith & Wesson Special. There is no gun made in this

caliber easier to manipulate; none more carefully made. Mr. McCutchen, from long experience, has learned this .38 Special thoroly. The chances are that with years of further experience he would likely better his past performances with that arm but little, if any. He, in all probability, knows that gun as he knows no other. Let him learn the old single action Colt as well; then let Mr. Thomas hold the stop-watch on him while he goes after the 12-inch bull at ten yards and if after the smoke settles Mr. Thomas hasn't some rapid-fire records with big six-guns to write about I shall be disappointed.

If Mr. McCutchen has become so accustomed to cocking the .38 Special with the end of the thumb (and I have never met a man who could cock one readily by dropping the thumb around the hammer spur as in the case of the S. A. Colt) that he finds any other method awkward in using the S. A. Colt, I should not expect him, or any other, for that matter, to ever be able to speed the Colt up to its best gait unless —note the word—he should have Mr. J. W. McCowan, Yoncalla, Oregon, "knock down" the hammer spur as Mr. Peret has had done to all of his S. A. Colts which permits cocking with end of thumb as in the more modern revolver. One of these S. A. Colts, with such a hammer spur, in the hands of Mr. McCutchen, should develop the greatest speed possible, I think.

Due to a badly contracted little finger, which happens to be on my right hand, rapid work with a revolver of any type is out of the question with me, and especially with the S. A. Colt, as it has stiffened the whole hand to a great extent. I think, however, that with a knocked-down hammer to a single action Colt I could grind out a grist as quickly with that gun as I could with any other, both to be used as a single action. But that contracted little finger absolutely prevents the thumb reaching the high hammer spur of the old Colt, while the stiffened hand slows things down when trying for speed with any revolver.

Just a few remarks concerning Mr. McCutchen's experience with a "tied up" gun when going after top speed. I note that neither he nor Mr. Thomas are positive as to just what may have caused the trouble, but I am inclined to think that the trigger finger failed to let the trigger fully forward, but still far enough forward to permit the hand to engage the cylinder ratchet, and the hand to the double action revolver, you know, is pinned to the trigger. When the trigger was drawn to the rear the cylinder was revolved the 1-6 of a revolution, but the hammer was not raised, due to the fact that the trigger had not been allowed to go forward far enough to let the strut, as the Colt call it, or sear as S. & W. have christened it, engage with point of trigger. As a consequence there was a skipped chamber when the hammer should have fallen, though the next pull of the trigger a shot resulted due to the trigger having this time been permitted to go fully forward before being pulled. I do not state positively that this is what really happened, but believe that this is actually what occurred; and that it can happen anyone can easily demonstrate for himself by letting trigger forward to the right place and then pull to rear. I have tried this out quite thoroly and find that the difference between getting a shot and a skipped cartridge is a hair-splitting affair. Probably this difference, if actually measured, would be anywhere from .001 to .0001 of an inch. Two things can happen, I find, if trigger is permitted to go forward nearly its full sweep: one is the trigger cannot be drawn to the rear until released and allowed to go fully forward, while the other is that if trigger is pulled the cylinder is revolved 1-6 of a revolution but without hammer being raised. In either case the fault cannot be attributed to an imperfectly designed revolver, but to the simple fact that in reaching for top speed the operator fails to give trigger full swing. I trust that neither Mr. Thomas nor Mr. McCutchen will understand me as saying positively that the above is what caused the trouble with Mr. McCutchen's revolver, but I am strongly of the opinion that it probably may account for the difficulty. I can hardly think that the stop-spring was too slow. In support of this belief, just think of the rapidity with which the automatic arms of various kinds are fired and how fast each part has to move to perform its assigned duties! And yet in the best of the automatic arms few jams, or failures to function properly, can be attributed to sluggish springs. And then, again, notice how much farther some of the springs have to travel as compared to the stop-spring of a revolver and all this several times per second!

I note Mr. Thomas' remarks concerning the power of the .45 Colt as variously loaded. Just why the powder maker (or possibly the complaint should be laid at the door of the ammunition factories) have not produced something in the smokeless line for this cartridge equal in power to the original 40-grain black powder load, I fail to understand. Years ago, soon after the Laflin & Rand people placed the Bull's Eye powder on the market, I shot a good many thousands of the .45 Colt cartridges loaded with 5.6 grains Bull's Eye and, while I had no way to determine the point to a certainty, I was of the opinion that this made a load not far from the old black powder one. I know that the results, so far as accuracy were concerned, were very satisfactory, and tho this load may be inferior to the full black powder load in

power, the reduced recoil and practically no fouling would lead me to use it in preference to the old-time smoky, barrel-and-cylinder fouling one. From some recent experiences with Bull's Eye powder, however, in the .44-40 Winchester rifle cartridge, used in a 1908 Smith & Wesson revolver, I am inclined to think that 5.6 Bull's Eye in the .45 Colt or five grains of this powder in the .44-40, when used in a revolver, produce cartridges of less power than the black powder loads for which they were originally intended. Failing to date to obtain velocity figures for various loads (European war keeping powder factories too busy to attend to all the requests that reach them from the cranks just now the cause—our wants will be attended to after the dove of peace is seen thru evaporating clouds of powder smoke), I cannot be certain concerning several things I should very much like to know, and one of them is how the 5-grains Bull's Eye load I am using in my .44-40 Smith & Wesson compares in power with some of the factory ones.

Five and six-tenths grains of this powder for the .45, or 5 grains for the .44-40 are greater charges than recommended by the makers, but as the 5 grains for the .45 and the 4.5 grains for the .44-40 seem but about half way between mid-range and full-grown ones, the temptation in my case was great to exceed the recommended charges slightly. In the .44-40 S. & W. I used 5.5 grains Bull's Eye, (1908 model, remember—don't advise it in the jointed-frame model), the few strings fired at 50 yards proved satisfactory enough except the barrel leaded at the breech after which I dropped back to 5 grains where the Ideal measure will always be set for this cartridge when using Bull's Eye. Judging from report, recoil and penetration the 5-grains Bull's Eye load is not as powerful as the Winchester low-velocity smokeless cartridge. But penetration tests lack a whole lot of proving convincing as to the comparative power of different loads shot from the same gun. Other things being equal, the bullet that ruptures least will give the greatest penetration. For example, take a .30-30 rifle and shoot from it two cartridges, both loaded with same charge of powder, but one with soft-point and the other with a metal-patch one. Let the target be enough white pine to stop both bullets. Both bullets travel at the same speed and both strike with the same force. One, the soft-point, ruptures, tearing a big hole, but seldom drives deeper than a foot, but to the depth it penetrates it tears a large, ragged path: this is the killing bullet. The other cuts a comparatively smooth, round hole and penetrates three feet or more. At some certain range, however, it may be 1,000 yards, it may be more or it may be less, the soft-point and the metal-patch bullet fired into a substance that will not rupture the soft-point bullet, will both give the same, or practically the same penetration due to the velocity having fallen off so much that the soft-point bullets do not upset on striking when we find the hole in the white pine as small and as smoothly cut as with the full-jacketed bullet. This explains why (to many, however, it will always remain a deep, dark mystery) at the longer ranges the game is often found to travel long distances though struck in a place that would have anchored him almost instantly had it been struck at ordinary distances.

From the above, and much more that might be written along this line, it will be plain why I do not think it best to be too certain which of the various loads I tried out for penetration gave the greatest energy. If one were to judge as to the comparative power of the several cartridges tested, however, the low-velocity Winchester smokeless load soft-point, metal-patch bullet would slightly, though very slightly, take the lead over the 1 to 15 cast tin and lead bullet with same powder charge. This cartridge is now being loaded with DuPont No. 91 smokeless powder, this powder being only sold to the cartridge companies. It is the powder that is used in loading the .22 long rifle (smokeless) cartridges, the .22 Winchester automatic and the .44-40 Winchester low-velocity cartridges and probably others that I do not know about. I am inclined to think this is the powder that a Mr. Rowell wrote of using in his .38-40 Colt which gave such good results on deer, bear and elk. This Winchester smokeless .44-40 cartridge gives a muzzle velocity of 918 ft. sec. and the Du Pont people say that its quick burning properties adapt it perfectly to many revolver cartridges. They also speak highly of another bulk powder of their make, the Sporting Rifle Powder No. 80, as being especially good for the .32-20, .38-40 and .44-40 Winchester cartridges whether used in rifles or revolvers. Hope to try some of this powder soon.

Five grains Bull's Eye and cast bullet, and same powder charge and soft point, metal patch bullet showed a slight difference in penetration in favor of the latter; but the difference between the last two loads and the first two was more marked, the No. 91 smokeless load taking the lead. Every bullet was more or less mutilated, but the average upsettage of all averaged so nearly the same that one could draw no accurate conclusions as to which of the four loads really gave the greatest energy, but think the honors lay with the bulk loads.

So far as I know, the most powerful smokeless factory cartridge is turned out by the R. A.-U. M. C. people, the velocity

being 1,028 ft. sec. Velocity figures for this and the Winchester cartridge were obtained with revolver with six-inch barrel. This U. M. C. cartridge is loaded with 16 grains Sharpshooter powder and either soft point or full metal-patch bullets. Many object to this powder on the ground that, as they claim, it rapidly destroys the barrel; others object to the metal-patched bullet as unnecessary in a revolver. To get the most powerful smokeless load in the .44-40, however, I am inclined to think we will have to put up with one, or both, of these evils or drop down to a lower velocity. I had hoped to find a cast bullet, smokeless load for my Smith & Wesson with a velocity around 1,000 ft. sec., but am afraid I shall be disappointed. Does look like the powder companies should be able to develop a smokeless powder tho that should give this velocity with a cast bullet which would be only equaling the black powder cartridge.

The only serious objection I can see to the Winchester smokeless cartridges is in the slightly lower velocity and the metal-patched bullets, and the further objection which applies to all factory cartridges, the cost of ammunition, which makes it prohibitive for the average shooter to indulge in much practice. The only remedy is to reload. To reload means Ideal tools. Before touching on this reloading of the .44-40 cartridge, however, let me mention a few things for which I am indebted to Mr. D. B. Wesson.

But wait a moment. It is pretty generally known, I believe, that the Colt people can supply their big guns chambered for all of the popular big revolver cartridges such as the .38-40 and .44-40 Winchester rifle cartridges, the .45 Colt and the .455 Eley (English) cartridge, for, you know, the Colt people see to it that this information appears in their catalogs, as it should. I have had many letters from parties in which they expressed regrets at the Smith & Wesson people not supplying their 1908 Military revolver for other than the .44 Special and Russian cartridges. In fact, I saw the statement in Outdoor Life not long ago that this arm could not be had for the .45 Colt. This is all wrong. This arm can be had for the .44-40 Winchester rifle cartridge, the .45 Colt revolver cartridge, the .455 Mark II (English) cartridge and, when the factory is not rushed, for the .38-40 Winchester rifle cartridge. I know that this will be welcome news to many, therefore pass it along Have never shot any revolver using the .455 cartridge, but understand that it is loaded with 6.6 grains Cordite in the Kynach shell and 275 grains bullet. Have been unable to obtain velocity, but Mr. Wesson estimates that it must be somewhere between 850 and 900 ft. sec.

As regards the use of metal-patched bullets in a revolver, they do not consider them either necessary or advisable. Their decision in this matter is based on experience with revolvers returned to factory with ruined barrels caused, as they claim, by a metal-patch stripping and remaining in the barrel with the result that the next bullet rambling along that way ruined the barrel. My experience with metal-patched bullets in revolvers has been limited to a few hundred shots with only one make of ammunition and in the .32-38 and .44 Winchester rifle sizes. Absolutely nothing of a disastrous nature to report to date. Still I do not fancy the metal-patch bullet where a cast one is just as good, or better; hence my reloading.

One of many things I never half-way understood was the Colt people boring and rifling their revolvers for the .44 S. & W. Russian, the .44 S. & W. Special and .44-40 Winchester cartridges the same. The depth of rifling, the twist (one turn in 16 inches) and diameter of barrel being the same for the three cartridges. The same with the Smith & Wesson arms. For enlightenment I wrote the latter company and, with permission, quote as follows:

"In answer to your letter of May 28, we would say that you are right in the twist and diameter of the .44 Russian, .44 Special and .44 Winchester being the same, the twist in all cases being one turn in 20 inches and the barrel diameter from the bottom of the groove is .430 inch in each case, with 1-1000 tolerance. The diameter of the bullet of the .44 Russian and the .44 Special is .430, while in the .44 Winchester it is .425, 5-1000 inch less.

"We have in this plant no fixed rule for determining either twist or barrel diameter, it being in all cases a matter of experimentation and a system, in fact, of trial and error. When we get what we consider to be the best twist and diameter we adopt that. In general, the diameter of the barrel is identical with the diameter of the bullet, but this does not hold true in all cases, as you have mentioned."

If any one had asked me for an opinion concerning this matter, I should have said that the .44 Russian should have had the quickest twist of the three cartridges, one turn in 16 inches being, probably, about right while a slightly slower twist for the .44 Special, say one turn in 18 inches, would have suited that cartridge and a still slower twist for the Winchester cartridge, about one turn in 20 inches, but would never have suggested the same diameter of barrel for all three cartridges. To me it has seemed that the .44-40 revolver barrel should be bored not larger than the diameter of the bullet, or that the barrel diameter and bullet diameter should be identical in this caliber, the same as it is in the case of the

Russian and Special. But it will take a much better marksman than I am, or ever expect to be, to prove that the boring, rifling, diameter of barrels, etc., of either Colt or Smith & Wesson arms are not exactly as they should be, for if there is anything in the revolver line that will shoot better than a Colt or Smith & Wesson it will be another Colt or Smith & Wesson!

For some reason, for which I offer no explanation, the impression seems to prevail among a great many shooters, and here we may include many experts, that revolvers developing the recoil of a fully charged .38-40, .44-40 or .45 cannot be made to show accurate results. These same shooters will readily admit that loaded with moderate loads they will shoot well enough, but never with the heavy charges. As for myself, if I thought as these shooters do, I would drop down to a smaller arm before I would be found using a heavy revolver from which only moderate charges were to be shot. But the shooters I have in mind are in error, I believe, tho this is not being written for the express purpose of proving this contention. Of all the large cartridges used in revolvers that is more often spoken of as not well adapted to revolvers the .44 Winchester, probably, takes the lead. And of this cartridge, when used in revolvers, I intend to write about. Nearly two years ago I ordered a 1908 model Smith & Wesson to handle this cartridge. The arm has a 6½-inch barrel, was fitted with sights of my design at factory, but which I have altered slightly since the gun fell into my hands Concerning the revolver itself, I feel inclined to mention a few things about it that has impressed me strongly; especially am I impelled to do this in view of the fact that we have so many inquiries about it but see but very little concerning it in print. First, it is a Smith & Wesson. Absolutely nothing need be said about the material, workmanship, reliability, etc., of this arm—it is a Smith & Wesson, and that is enough for the man who has owned these arms. I know of no double-action revolver with a better shaped grip. This grip fits to perfection. Whether it would suit everyone as well in this respect as it does me I do not know. For a double-action gun the grip could not be improved for me at any point; and the grip of a revolver is one of the important features the real crank will be investigating from the first. The revolver works very smoothly either as a single action or self-cocking arm. Due to the full saw-handle grip, the man with tender hands will be punished pretty severely when using the fully charged cartridges. Two months swinging an axe or pulling a cross-cut saw and the hands will toughen until the heavy loads have no terrors for him.

As for the accuracy I have some tests to report which will be thrown in at the tail end of this article which I think will be of at least slight interest to some who have thought it impossible to secure close groups with a revolver handling the .44 Winchester rifle cartridge.

With the exception of a few dozen shots, the loads consisting of 4.4 and 4.7 grains Bull's Eye powder and the 210-grain bullet (cast), no loads lighter than 5 grains of this powder and the 210-grain cast bullet were used. The light loads mentioned were loaded in shells without resizing the muzzles. As a consequence bullets were not held by crimp as tightly as they should have been—in fact some of the bullets could be pushed back into the shells with the fingers without difficulty. This was not at all as it should have been. The shooting varied greatly with these loads. Out of every ten shots seven or eight would group fairly well at 50 yards, but with a certainty of two or three dropping from 6 to 14 inches or so lower. Judging from the report and recoil of these low shots, something radically was wrong somewhere and later, after getting a set of Ideal tools with muzzle-sizer, the difficulty was found to be where I had suspected all along in the loose-fitting bullet in muzzle of shell. In any revolver using this cartridge which is chambered large enough to swell the shell to any great extent, and most revolvers are so chambered, it is practically impossible to get along without the Ideal No. 3 Special reloading tools with its various attachments. It is better to have the best even if it does cost more. With the muzzle-sizer it requires but a few minutes to resize a hundred shells and when the bullets are seated properly, crimped or uncrimped, one has the satisfaction of knowing that they are there to stay, and that the shell grips the bullets firmly their entire length, just as they should. Back in the black powder days we worried along very well when reloading with black powder and found little cause for complaining over the loose fitting of the bullet within the shell; and still, usually, the bullet did not fit as snugly as it should, but many were deceived thinking it fitted tightly due to the powder being packed tightly within the shell behind the bullet preventing any rearward movement while the heavily crimped shell held it firmly from moving to the front. But the bullet was not gripped its entire length as it should have been and as it always will be if the Ideal tool has the muzzle-sizer attachment, as it should have.

Considering the fact that it had been several years since I had done any revolver shooting worth mentioning, I knew that it would be out of the question to secure satisfactory results shooting any revolver off-hand, as I have always shot a revolver,

therefore decided to see what could be done with this .44-40 Smith & Wesson from rest at 50 measured yards. This rest was so designed that the shooter could sit down and afforded a rest for each elbow, the revolver and both hands being bedded in a feather pillow over which a gunny sack was thrown to head off possible hostile demonstrations from the gentler members of the household should powder burns appear on the pillow cases! The handle of the revolver was gripped with the right hand as for off-hand shooting, but not more firmly than usual, no effort being made to prevent its recoiling. The first finger of left hand pressed against frame under cylinder while the thumb of same hand pressed against lower end of stock at side at bottom. This I found the best way to secure steadiness in holding of the many ways tried.

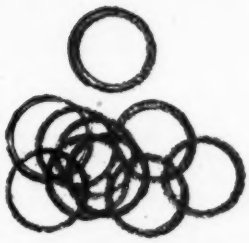
On some targets but one five-shot string would be fired, while on others two five-shot strings were shot. In the latter case the first string would be marked before the second was shot, thus enabling the accurate measurements of all strings. Part of the shooting was with three-inch bull, the balance with an eight-inch. Size of groups were determined after the system mentioned in Gould's "Modern American Revolvers and Pistols," the size circle that would cover or touch all shots represented the size of the group. In this book I notice that he mentions that the .44 Smith & Wesson Russian model had repeatedly placed the contents of the cylinder (six shots), when shooting from rest, in a three-inch circle. This, of course, with black powder cartridges. Of the .45 and .44-40 single-action Colt, which undoubtedly had a 7½-inch barrel, Mr. Gould writes: "It was not difficult to place the six shots in a 5-inch circle at a distance of 50 yards, and often a 4-inch circle, and occasionally, with the .44-caliber, .40-200 cartridge, a 3-inch circle would touch or enclose all of the shots." This, also, was with black powder—40 grains of the dirty stuff and the 200-grain bullet. The .44 Russian, with mid-range smokeless ammunition, shot from rest, I think I have read somewhere, has often placed its six shots within and on a 2-inch circle. A short time ago I also read of this feat having been accomplished with both Colt and Smith & Wesson revolvers using the .44-40 Winchester rifle cartridge. Absolutely nothing need be said concerning the .44 Russian in either Colt or S. & W. arms from the accuracy standpoint—everyone knows that it is equal to the best. As for power, however, when loaded with the 23 grains black powder charge it—well, it didn't amount to much; to me, when shooting much beyond the 50-yard range, it seemed too much like throwing rocks—anyway the rainbow curve described by the heavy bullet propelled by the light powder charge often inclined one to that belief. But I was writing of the .44-40. The groups I have happened to turn out do not, in my opinion, represent the best average that the same gun and ammunition would show in the hands of a better shot. I size the whole thing up about like this: A few of the smallest groups would probably be equalled occasionally, at best, while the largest groups would be but seldom made by one accustomed to firing thousands of shots from rest—a thing absolutely new to me. When a small group was made, I was, naturally, pleased and surprised. Then, on the other hand, when a group around six inches fell to my lot, I was also surprised but far from being pleased. All this due to being absolutely new to this rest game.

Now I am going to express an opinion that may stir up a cyclone—time will tell. There are so many who will have it, you know, that the .44-40 as a revolver cartridge is not to be depended on for accuracy. My opinion is this: If it were possible to always hold exactly the same for each shot, I think that this cartridge, full charge, in the best of the smokeless loads could always be depended to shoot less than 3-inch groups at 50 yards. In five-shot strings I think that nine out of ten strings would be in or on a 2-inch circle. As it is absolutely impossible, however, to hold exactly the same for every shot, this theory of mine can never be made a demonstrated fact. Now you can hustle along with that rope Mr. Thomas mentioned—I'm ready to swing.

Size of groups, at 50 yards, from rest, with .44-40 model 1908 S. & W. revolver, 6½-inch barrel, with 5 grains, disc form, DuPont Bull's Eye powder and 210-grains cast bullet, five-shot strings: First, 5⅜ inches; second, 4¼; third, 5⅛; fourth, 4¾; fifth, 2¾, while the sixth was 3⅛ inches. Above at 3-inch bull.

Five grains same powder charge and same bullet, distance, etc., two strings to target: First five shots, 3¾ inches; second, 3¾; while size group for the ten shots was 4½ inches. Third and fourth strings on one target: First five shots, 3¼ inches; second five shots, 3¾, while size for the ten shots was 4¾ inches.

Five and five-tenths grains DuPont, disc form, Bull's Eye, and 210-grains cast bullet, four five-shot strings, two strings to the target: First five shots, 5⅝ inches; second five shots, 4¾ inches. Second target: First group, 4⅝ inches; second group, 1⅝ inches, while the size for the ten shots is 4⅝ inches; eight of the ten shots can be covered or touched by a circle 1⅞ inches in diameter. Size of group for the twenty shots is exactly 6 inches. As barrel leaded at breech with this load, further shooting with this charge was discontinued.



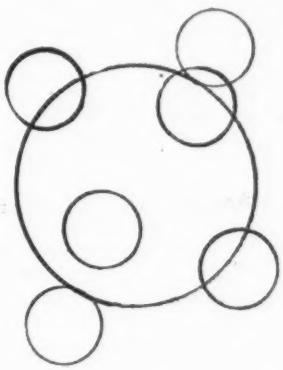
This group of 10 shots was made at 30 feet, off-hand, while testing for penetration. Five loaded with 5 grains DuPont Disc Bull's Eye and 210-grain cast bullet and 5 with 5-grain Bull's Eye and soft point, metal-patch bullet. Ten shots, under same conditions, were fired just previous to this target, five loaded with No. 91 powder and cast bullet, the other five being Winchester factory low-velocity cartridges. Eight of these last ten shots can be entirely covered with a 7-8 inch disc, while a one-inch circle will touch or enclose all ten shots. Group is from center of bull to left. Large three-inch bull was used, it being the only one at hand. 1908 Smith & Wesson .44-40 revolver, 6½ in. bbl. Target was moved a few inches after each shot that no two bullets might cut in to same hole, which would result in varying penetration. Twenty shots at 50 yards, fired off-hand, soon after the penetration tests, were badly scattered, proving what the author knew beforehand, that good, consistent grouping could not be expected after so many years of practically no off-hand revolver shooting.

Five shots with Winchester make smokeless, soft-point cartridges, measures 4½ inches. Five with 5 grains Laflin & Rand Bull's Eye and 210-grains cast bullet, 4⅜ inches. Five shots with DuPont Disc Bull's Eye, 3⅞ inches. Ten shots on same target with 5 grains Laflin & Rand Bull's Eye: First five shots, 5¼ inches; second five shots, 4⅜ inches, while size for the ten shots was 5¼ inches. Eight of the ten shots were in center of 8-inch bull, a circle 1½ inches covering or touching all eight shots. Ten shots on one target, same load: First five, 2⅝ inches; second five, 4⅞ inches; size of group for the ten shots, 4⅞ inches, the size for nine of these shots being 3¼ inches. Size group for the twenty shots, 6 inches.

Ten shots on same target, Winchester factory smokeless, soft-point, metal-patch bullets. First five shots, 1¼ inches; second five shots, 4⅜ inches; size of group for the ten shots, 4⅜ inches. Ten shots on one target, same ammunition: First five shots, 3¼ inches; second five shots, 1¼ inches; last six of these ten shots shown with this article full size which represents a circle 1¼ inches covering or touching all six shots. Size group for the ten shots, 3¼ inches. Size group for the twenty shots, 6¼ inches.

From the above I do not intend to create the impression that this Smith & Wesson of mine can be depended on to always turn out as close groups as the smallest ones mentioned, as this would be foolish in the extreme, nor do I think that the largest ones should be taken as a standard of its accuracy. Neither do I desire that anyone should understand me as advocating the .44-40 as the best cartridge for a powerful revolver; but I do desire to have it understood that it will show much better accuracy than is supposed by many.

Pending velocity figures, I am uncertain as to the power of the 5-grains Bull's Eye load as compared with some of the regular factory ones, but I am not going to be surprised should it develop that this 5-grains Bulls' Eye charge should give no more than 800 ft. sec. If so, this will not look at all



Exact size of group of last six shots in second ten-shot string at rest at 50 yards with 6½-inch 1908 model Smith & Wesson revolver chambered for the .44 Winchester cartridge, Winchester low velocity ammunition with metal patch, soft point bullets. A circle 3¼ inches in diameter would have enclosed or touched all 10 shots.

good to me; nor shall I be contented until a smokeless load is found that gives at least 900 f. s. with 210-grains cast bullet. I think there is a splendid opportunity here, and also in the case of the .45 Colt revolver cartridge, for the powder and ammunition companies to get busy and experiment with the object in view of turning out revolver loads in these sizes equalling the original factory black powder ones. Years ago I have seen bullets fired from the 7½-inch barrel Colts, in both of these calibers, the powder charges in both cases being forty grains black, the cartridges being either U. M. C. or reloaded ones, and in clear, white pine, 8x8 timbers, do not remember of a bullet failing to pass entirely through. And, do you know, some of the smokeless loads turned out for the .45 Colt penetrate less than five inches! It seems almost a disgrace to the old .45 to feed it on such fodder. If the cartridge factories decline to turn out smokeless loads of the power we are after, provided the powder com-

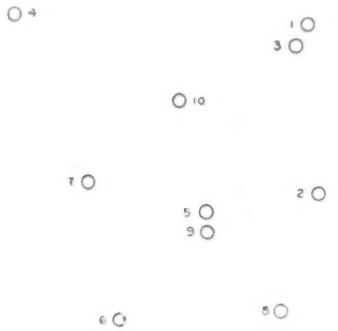
panies produce a suitable powder (if such a powder does not already exist), then, with such powder within our reach we will get busy with our Ideal tools, and while we may not create quite the noise or smoke as with the old ammunition, we will not insult the "Old Reliables" by using anything so frail as a five-inch white pine timber to catch our lead. Hey, Mr. Thomas?

Since writing the above it has occurred to me that this article may be taken as trying to "knock" Bull's Eye powder. Such, however, would be far from the truth. I have used this powder in practically all of the Colt and Smith & Wesson revolvers and, like thousands of others, in many calibers, would care for no better. In the .44-40 shell, however, I am of the opinion that a better powder can be had. Too great powder space, I presume, the trouble. Probably the same would be the case with the .45 Colt and the .38-40. In revolver shells of less powder space the Bull's Eye for mine EVERY time. In closing I might say that in making some penetration tests with my 5-inch .44 S. & W. Russian and the .44-40 S. & W. with 6½-inch barrel, both revolvers loaded with 4.4 grains Bull's Eye powder and 205-grains Anderton bullet, loaded in the Russian shells as cast, but sized to .424 inches for the Winchester shell, the 5-inch Russian gave decidedly the greatest penetration. From this I infer that the Bull's Eye powder in the smaller powder space of the Russian shell developed more power than the same charge in the .44-40 shell with its greater powder space though shot in a revolver with a longer barrel.

Accuracy in Practical Use—The .250-3000 Savage As It Performs

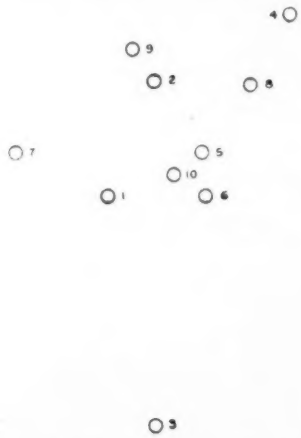
L. A. Danse.

Editor Outdoor Life:—In response to a number of requests from gunmen for statements of actual every-day results as regards accuracy from this new rifle and its cartridge, the writer has on several occasions made group targets at the range to ascertain the possibilities of the .250 for game HITTING. So far as machine rest groups go, they are simply indications of the ultimate accuracy of an arm. With the rifle tested, when it came, were two sheets from the Savage factory ballistic test department. One showed a group of 4.1" and the other 4.3" at 203 yards range. This looked pretty good to us but we figured it would have to be discounted when we shot without said machine rest.

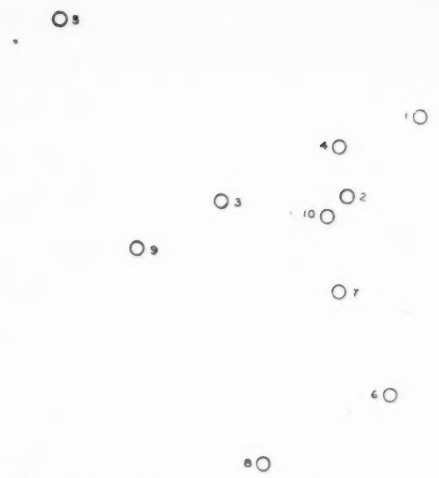


Target No. 1.—Shot prone with sling, 200 yds.; group 4 3/8 in.

Several of our friends expressed doubts as to the arm having the requisite accuracy for serious work. Some of our correspondents went further, stating that they had no use for the "freak" rifle. Well, we got our Dutch up! We commenced to wonder what the little spitfire would do, how far from "taw" we were. So we hiked her out to the range, with a box of cartridges to try. We pasted up the A target, ran it up and took our kit to the 200-yard line. There was no sun, the day was chilly and misty and the air was still. This was a common May morning. Wishing to take no advantage we shot a ten-shot group sitting, without the sling. This is a position used by quite a few hunters, when taking a long shot. Bear in mind, too, that we were using the rifle with open sights. The group came out 5¾". (All groups



Target No. 2.—Shot prone with sling, 200 yds.; group 4 1/2 in.



Target No. 3.—Shot prone with sling, 200 yds.; group 5 1/8 in.

shown in accompanying cuts are reduced one-half.—Editor.)

Then we went back, pasted up and returned to the firing line for another try. This time we shot off hand, standing. We put the 10 shots inside 7" even. This was slow fire, taking plenty of time, but was better than we had done for some time even with the Springfield. We have since made several possibles, but none with a better group than this. We have seen one of the boys make a 6½" group with the

Target No. 1.—Machine rest, 200 yds.; group 4.1 in.

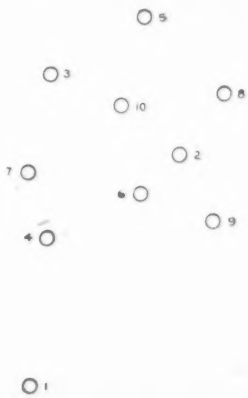
service rifle, but he's a better shot than the writer ever was. So this was not bad.

The next week the weather was bright, warm and sunny. We were out bright and early. We had put on a Lyman rear sight and a sling strap in the mean time. The 200-yard target was again requisitioned and we started to beat the record. We did. The first group we wabbled all over the card and came up with a group 8½" across grinning us in the face, shot from the sitting position, with sling. Well, here now. This is bad. So we settled down in the prone position, with sling, and blood in our eye. We held that rifle as if we were trying for mountain sheep. There was a gusty 3-o'clock wind blowing and we

Target No. 2.—Machine rest, 200 yds.; group 4.3 in.

were careful to watch it, with the result that we chalked up 4¾" circle to our credit. Some better. We quit, as the saying has it, while the quitting was good.

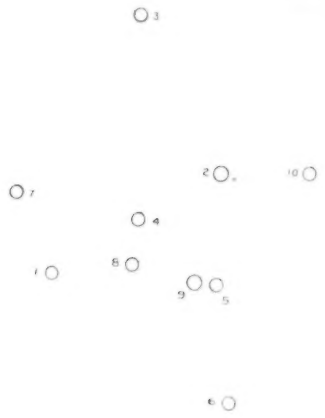
It was several weeks before we again got out. This time it was hot and sultry, a storm brewing. Our old 200-yard spot was located and we tried it prone with sling and Lyman sight again. We got a 4⅜" group and then had to beat it for



Target No. 6.—Shot prone with sling, 200 yds.; group 3 15/16 in.

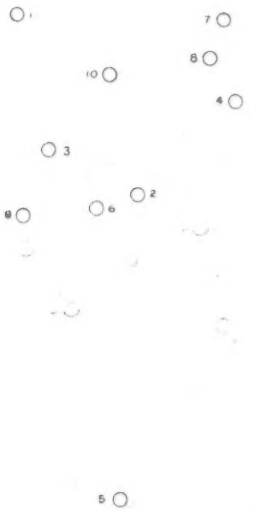
shelter. We went to the pits to keep dry, and while there the idea suggested to take a record of the group. So we got the target and a piece of cardboard, with a pencil

and sheet of paper. We put the paper on the card, held them back of the target, against the sheet and marked through the bullet holes as they were pointed out to



Target No. 7.—Shot prone with sling, 200 yds.; group 4 1/4 in.

us by the marker who was in the pit during the firing. This idea seemed good, so we determined to follow it up, having the marker make these record sheets after each subsequent group fired. We had



Target No. 4.—Shot prone with sling, 200 yds.; group 5 1/8 in.

wished for photos but the targets and frames are clumsy and hard to handle and pretty badly shot up, so we decided to let the marker make the records as described. Acordingly, all the following groups were recorded that way. This was May 1 and we again tackled the matter on the 6th.

This time we had luck getting a nice bunch inside 3¼" with one low shot making a 4½" group. This was also shot prone, with sling and Lyman sight.

Another group shot about three hours later, the same day, after 60 rounds of Government stuff on the 300, 500 and 600-yard ranges, gave us 5⅛".

Another lapse of two months came before the next tests. This was surely in the nature of average use, as one seldom fires a hunting rifle regularly. This time we again had a nice small bunch of 9, going into 3⅛", with one shot making the group 5⅛". The wind was blowing from 8 o'clock, quite strongly. Another group, shot immediately, was not so good, being 5¼". We then waited several hours, during which time we fired 20 shots of Spring-

Target No. 5.—Shot prone with sling, 200 yds.; group 5 1/4 in.

field stuff, ate lunch and rode about 15 miles. We rested for half an hour, then, the wind having died down, we put on one of our new Orthocentric front sights, put a cup disc in the Lyman rear sight and got a sack of sand on which to rest the left hand when firing. This group is in the nature of a fluke, being smaller than the factory states average machine rest groups come. It was 3 15-16". We were justly proud of this, although we had everything in our favor to make it.

Another group shot the same half an hour later, about sundown, gave us 4¼".

Altogether we had fired for test 110 shots, over a period of over two months, in all kinds of weather, with different sights, different equipment and varied positions. One group, we plainly gave the rifle the worst of it, when we made the 8½" bunch. So we, in fairness to the arm,

it being our own fault, cast it out and averaged up the 100 shots for composite group. This should answer the accuracy possibility question of this rifle fairly well. While we don't pose as authorities here, the writer described this .250 rifle for Outdoor Life's readers, so feels it only right to give these trials publicity for their benefit.

The composite group averaged up 5 when the "bum" group was left out. Including the bad group, the composite is less than 5⅞", while if we wish to measure the rifle's real accuracy, we will include the two machine rest groups, leave out the off-hand and the sitting groups and strike an average, made machine rest and prone with sling, which is an entirely fair assumption of accuracy capability. Thus we get 4 11-16" as an accuracy group measure, with regular ammunition, fired over a period of two months, under varying conditions.

To sum up, from the showing made, we would consider that with proper conditions, the accuracy of the .250-3000 rifle would bring its shots into a 4¼" circle at 200 yards. This with a fellow who can hold it right, or else a machine rest; and we believe it will be found quite good for a stock sporting rifle. The record sheets of the later tests we are reproducing, showing the distribution of the shots. It would be interesting to see similar records made of other arms, for comparative purposes. Go to it, fellows.

The Frontier Six-Shooter

By Chauncey Thomas.

I am taking this liberty of asking you a few questions. I am intending to take a trip to the Rockies this fall. I want to carry a single action Colt army 7½" barrel, but if 5½" is about as good for big game shooting I will get it, as that is some easier to carry. What I would like to know is the best caliber for big game killing, the .38-40 W. C. F., .44-40, or 45 Colt, or .45 automatic?

The Winchester company says the .38-40 is superior to the others everything considered. Outdoor Life sticks to the .45 Colt as the best revolver cartridge for large game, accuracy, etc. The Colt Company says the .38-40 is the longer-range revolver cartridge, but that the .45 Colt has the most stopping power on game. While the ballistics show the .38-40 has more velocity, energy, etc., than the .45 Colt, I can't see where the .45 would be a better big game killer. U. M. C. black powder, 40 grains, of course, is the hardest knocker of all.

As I have not used these large calibers I don't know which would be best. It seems to me, from what A. C. Rowell writes in June Outdoor Life, that the .38-40 would prove the best killer of all, and have the largest range.

As you surely know which of these calibers are best I would like to hear from you. I now have a .38 S. & W. Special Colt, Officers model, 6" barrel, and it shoots fine, is good for punching targets, but won't kill coyotes much better than a .22 long rifle cartridge.

My reason for believing the .38-40 smokeless, soft point kills best is that the bullet will mush-room on striking game, the metal case will expand and form a saw-like edge and cut a larger hole than a .45 lead bullet possibly can on game.

Again I understand the .38-40 is not as accurate as the .45 Colt, but for how many yards it is so I don't know.

Please let me know which you have found best by experience. I want the longest range revolver, the most powerful and accurate of revolver cartridge. Which loads have you found best, and make of ammunition, etc?

As soon as I hear from you will send in an order for the best one-hand gun.

C. GUNDERSON.

Ross Fork, Mont.

Your letter is one 'tis a pleasure to answer. Unless I hear from you to the contrary I shall take the liberty of publishing it, with this reply, because I think both might interest many gun cranks. That is, if there is room in the crowded pages of the magazine.

First, we will dismiss the .45 Colt automatic for your purpose. For military purposes I would recommend it above all other pistols, but you want a big game revolver, neither a military nor a target weapon. For the target, by the way, I would recommend just the gun you have, the .38 S. & W. Special, in either Colt or S. & W. make.

We are now down to the S. A. Colt frame with a choice of three cartridges, the .45 Colt, the .44-40 and the .38-40. The .45 Colt is about ten per cent more powerful in black powder than is the .44-40, and in a machine rest is a little more accurate. Over 100 yards it has a slightly lower trajectory than the .44-40, but under 100 yards the .44-40 probably has the flatter trajectory. This item is of considerable importance when one has to judge distance. Also, the .44-40 flies faster than the .45 Colt, and shot from a moving, trembling

muzzle it is, for this reason, perhaps a bit more accurate than the .45 Colt. In other words, from a rest the .45 Colt is the more accurate, but off-hand, so to speak, the .44-40 will result in more hits under 100 yards. The .44-40 is also a little bit quicker to shoot, because of a lighter hammer. The primers of the .44-40 are thinner metal, apparently, than those of the .45 Colt, hence do not require such a stiff mainspring. I would estimate about six shots from the .44-40 to five shots from the .45 Colt, due to this reason, all in the same time, of course.

Also the 5½-inch barrel is faster than the 7½-inch barrel. I would estimate nearly, if not quite, six shots from a .44-40 with 5½-inch barrel to four shots from .45 Colt, 7½-inch barrel. The .45 Colt with 7½-inch barrel and stiffer hammer is noticeably slower than the .44-40 with lighter hammer and 5½-inch barrel. The accuracy of the 5½-inch barrel nearly equals the 7½-inch barrel in off-hand shooting, although the two inches of extra sighting base is a decided advantage in machine or rest shooting. But for a holster gun the 5½-inch barrel is much to be preferred.

The .45 Colt gun is a couple of ounces lighter than the .44-40, both guns empty, but loaded both guns weigh practically the same. The extra weight of the six .45 cartridges about balances the slightly heavier barrel of the .44-40. The recoil of the two guns is practically the same. I doubt if one man in ten could tell from the recoil which gun he is shooting. In fact, the two cartridges are so nearly alike that there is hardly any choice between them. For a short-ranged man-killer I would take the .45, especially in a short barrel—say 3-inch—because of the larger caliber and heavier bullet, and where trajectory and judging distance did not enter. But for all-round outdoor shooting, game mostly, I would take the .44-40 cartridge. At either thing, however, one is about as good as the other.

All this so far with black or semi-smokeless powder, remember. Now in smokeless, I am inclined to think that the .44-40 develops more power than does the .45 cartridge. The .45 cartridges are not loaded as heavily as they were years ago, when the .45 got its reputation. Then it had a 260-grain bullet and all the powder the gun—and hand—would stand. But it is different today, when there are no more buffalo backs to plow thru nor any Injuns to stand off.

Now as to the .38-40. Loaded as it comes from the factory today, in either black or smokeless, it is not the equal to either the .44-40 or the .45 in power or accuracy. It has flatter trajectory, of course, and may throw its bullet farther, but over 300 yards none of the revolver bullets have enough power remaining to seriously consider. So "range" need not be considered, as 100 yards is about as far as a man is likely to shoot in the open with any revolver with any chance of hitting anything, because of the short sighting base of all revolvers and the high trajectory of all of them. Target work, of course, is a totally different game, that we are not considering here.

But I believe the .38-40 can be hand-loaded to exceed the .45 and .44-40 cartridges. Evidently A. C. Rowell—as told of in the June issue of this magazine—has done so, but also please do not forget Mr. Newton's remarks added to Mr. Rowell's letter. In that comment Mr. Newton speaks of very high pressures and that such cartridges would probably soon turn bad, due to changes in the powder used. But hand loading is a science in itself. Here I am concerned only with the factory cartridges, as I consider experimenting with smokeless powder by any one other than an expert to be a dangerous game—something for the average man to leave strictly alone.

Concerning the ballistic figures given out by various cartridge makers, remember that they are practically muzzle figures. What happens 50 or 100 or 200 yards from the muzzle is quite another story. One thing is sure, in practical doings the .38-40 factory load is not the equal in any way of the .45 or the .44-40. 'Tis a good cartridge, but the other two are better.

As for makes of ammunition, there is little to choose between any of the leading ones, such as U. M. C., or Peters, or Winchester. Personally, I generally use Peters' "semi-smokeless," as I somehow have not much faith in smokeless .45 cartridges compared to black or semi-smokeless (practically black) powder. Yet for amusement and practice I use smokeless, because it is cleaner, and the recoil and noise is less. But right here on my table as I write this is a box of .45 Winchester Lesmok, part of a box of Peters' semi-smokeless and a handful of U. M. C. smokeless. The Winchester in the .45 has 255 grains of lead, which is a slight advantage in my 3-inch barrel S. A. .45 Colt, while the U. M. C. loads 40 grains of powder. But how the 40 U. M. C. grains compare with the Winchester 38 grains I do not know. The two cartridges are practically alike, so far as I can tell from shooting them. Still, I usually buy Peters' "semi-smokeless" if it is convenient to do so. Any of them will do better than the man behind the gun can.

Now then, to answer the question in a nutshell: For your purposes I would get a .44-40 S. A. Colt, 5½-inch barrel, and use Peters' semi-smokeless or U. M. C. smokeless cartridges. If you select the .45 caliber, then I would use the Winchester in-

stead of the U. M. C. smokeless because of the heavier bullet.

Now consider the weight of the ammunition and leather goods. A box of .45 Colt weighs 40 ounces or 2½ pounds for 50 cartridges. Roughly speaking, a loaded S. A. Colt weighs 2½ pounds, belt and holster from 2 to 3 pounds, and 40 rounds in the belt about 2 pounds more; total, from 7 to 8 pounds. Some load, that! Equal to a carbine and about 30 rounds of ammunition. And 30 shots from the carbine will hit more and kill more than the belt full of .44-40 or .45 revolver cartridges. You save the weight of the leather and of the revolver cartridges you miss with, remember.

If you are to carry the sixgun on foot mostly, then I suggest a very light but hard holster with a flap, and about a 3-inch belt of thin leather, with two rings in it like a tennis belt, with loops for about a dozen cartridges. But if you are to ride horseback then take the heavy double holster and the broad, heavy cartridge belt, as it rides easier than the lighter arrangement, and horseback the weight does not count, but pounding on the leg, saddle or horse does count for much. The usual double holster was invented purely for horseback purposes so as to have a broad, flat back to protect the rider and the horse from the flapping and pounding of a 3-pound hammer in the shape of a sixgun. The holsters as usually made today are of too soft leather and the back part is as round and narrow as any single holster either with or without flap.

By the way, cut off that narrow belt-strap on all single holsters and put on a triangular piece of leather as broad as the holster on top where it hangs on the belt, and tapering to one rivet at the lower part of the belt. This prevents the rolling of the gun that takes place with a narrow strap.

In the old danger days the open holster was necessary. But today use the covered holster. It prevents accidents, especially with that big easily-cocked hammer of the .44-40 S. A. Colt, and keeps out rain, snow and dirt. There will always be plenty of time to jerk up the flap and pull the gun, as the non-expert cannot pull a gun from an open holster much quicker than he can from a covered one, nor as quick if the gun is tied in, as it has to be most of the time unless the gun fits so tight that it is harder to get out than from a loose-fitting covered holster.

As before in the magazine, I recommend two holsters and belts, as suggested above. The light one for walking, the heavy one for horseback and for the reserve ammunition.

And don't forget a scratch-brush, a small screwdriver and the oil or vaseline bottle.

Now, here is an old western trick, not very nice to mention, but very practical when using black powder and your sixgun is too gummed up with soot to shoot straight:

Urinate in the barrel and cylinder. The acid cuts the burnt powder, and one shot dries the barrel. When far from water and rags, or in the winter time, this trick may be worth remembering. Not needed with smokeless powder of course. I learned it when a boy in the Rockies from an old bear-hunter, Jack Hill, who never carried a rifle, but killed his trapped grizzlies all with a .44-40 S. A. Colt, 7½-inch barrel, black powder cartridge. That was before the days of smokeless, when we carried the .45-120-550 Sharps, and the .40-90 Pacific Ballard, or the 9-pound '73 model .44-40 Winchester when we wanted to go light.

I also suggest from a 2 to 3-pound trigger-pull, as a light trigger is a big help in revolver shooting. Also have the gun sighted for point-blank—that is, so a fine sight will hit a penny at ten yards. And if you can hit that penny once out of every cylinderful with either the .44-40 or the .45 you are an average good shot. Or if you can put all six shots in a 12-inch circle at 100 yards, then you are a good sixgun shot. A very good one, too. Beyond that distance 'tis all prayerful guesswork. Remember the high trajectory, the big drift in the wind, the effect of the wind on the hand, arm and body, and the action of the sun on the front sight. If the sun shines from either side and you are in the sunlight, allow about 6 inches toward the sun at 100 yards the same as you would for wind from that side. The effect is much more pronounced than in rifle work, remember.

For good shooting sit down if you can; hold the gun in both hands and rest the elbows on the bent knees. If standing, try always to lean against a tree, or any other handy support. Do not rest the muzzle of the sixgun on a solid rest, as it will likely shoot wild so held. If compelled to stand and shoot off-hand, try supporting the right wrist with the left hand, use both hands or put a stick over the right shoulder and hold it out, gun fashion, with the left hand, and on this stick rest the right hand. But always leave the muzzle free.

And whatever you do, do not grip the S. A. Colt. Leave it loose and free in your hand, as if its handle were an empty eggshell. Otherwise after a few shots the recoil will set your hand to trembling and you can hit nothing. The bullet is half-way to the target before the gun moves, so let her jump and avoid useless punishment. That way the recoil is no more noticed than is the recoil of a .38 target gun.

As for speed, one shot a second, quickly aimed, is my limit. Say into a 12-inch circle at 10 yards. For game shooting one shot every 3 to 5 seconds is quick shooting with the .44 or .45 S. A. Colt.

As for "smashing," etc., no revolver bullet has enough power for this to be seriously considered except on a man at close range. Mushrooming and all other effects on game, except penetration, is hardly practical with a velocity under 1,000 feet per second. And at game range, say from 50 to 100 yards, the velocity is down several hundred feet per second slower. At from 700 to 800 feet a second all the power in the bullet is needed for penetration with the .44 or .45 caliber. All that belongs to rifledom or mankilling and has nothing to do with practical, every-day revolver shooting.

And this above all, if you cannot hit anything with the big gun, do not blame the gun till it has been well tested out by some one who can shoot the S. A. Colt. It is not as accurate, remember, as the target .38, and a 4-inch bull at 50 yards is about the limit for the .44 or .45 cartridges out of a 5½-inch barrel. The target .38 will hit 3-inch bulls at that distance. Compared to the target .38, the .44 and .45 are about one-fourth less accurate, only about half as fast, but fully twice as powerful.

For grouse, rabbits and such light, fine shooting, you will find it a saving of weight and a big gain in meat to also carry a .22 S. & W. pistol and use the .22 long rifle smokeless, hollow-point greased bullets. The greaseless ammunition is not as accurate by far, although far more convenient. The .22 pistol and 100 to 150 rounds of .22 long rifle ammunition will not weigh much more than one box of the .44 or .45 cartridges, and will hit about five times as much small meat. Shooting game with a .45 is hard work. As for a coyote, it takes a good man with a telescope rifle to get him. He isn't much larger than a man's leg from the knee down, and his mangy fur is a great delusion thru the sights. You comb his hair and he passes on. Coyotes add at least one per cent to the dividends of the ammunition trust. They are bullet-proof.

As to Military Systems and The National Guard

I have just read with interest Mr. Chauncey Thomas' Campfire Talk No. 41—"The Swiss Military System," and I too am of the opinion that we shall never have an adequate national defense until such time as we adopt a system similar to the Swiss, modified to suit our needs; I agree with him in some degree about the needlessness of a standing army, with this exception: We must have a police force adequate to garrison our outlying possessions, and we should have a corps of professional officers to train the "citizenry in arms."

In reading Mr. Thomas' articles, however, one is constantly being shocked by statements which emanate from his prejudices and not from facts; he is doubtless one who knew the National Guard well fifteen or twenty years ago; he certainly can not know it now, or he would never assert that "As a national defense the National Guard is today practically worthless. It is trained to do but two of many necessary things, shoot and parade. The National Guard as a whole knows little or nothing of camping, and an army that cannot camp is worthless. Nor can the National Guard march, and what is an army that can not march? * * * Are the National Guard trained in trench making? Can they make a fire and cook a meal in the midnight rain? etc."

I have had fifteen years service in the National Guard of two different states. I know from experience that the National Guard can camp, and that they can march, and cook meals, and hold up their end generally, with any non-professional troops in the world, and Mr. Thomas is not in favor of professional troops.

In 1912 the Second Infantry, National Guard of Washington, was brigaded with regulars in the Gate Maneuver Campaign, during which we marched as far as the regulars every day with as little fatigue; camped in the rain with shelter tents (officers and men) every night; furnished detachments for outpost duty who cooked individually in the rain, and pitched camp after dark, and were cheerful and contented and healthy thru it all.

The officers of this regiment have taken picks, shovels, axes and wire pliers and personally constructed trenches, wire entanglements, abattis, bomb proofs, and land mines, in order to obtain the personal experience necessary to qualify them to instruct their men. The men of the regiment have dug and delved all day in the hot sun, learning to construct these essential defenses. Individual cooking is no mystery to them, and rain and mud and midnight meals have no terrors for them; they have officers who have done all those things themselves, who set the example, and everything goes smoothly.

As to strikes: during my entire term of service no organization to which I belonged ever did any strike duty; but I did serve thirty days in San Francisco during

the earthquake and fire. Mr. Thomas does not use accurate language in speaking of this matter. When he states that the regular army was used to suppress the strike in Colorado, he is plainly mistaken; they were used only to maintain the peace. When he states that they were used to suppress the strike of 1894, he is again mistaken, as they were used to protect United States mail. There have been cases where the National Guard has been used, in some states, by corrupt state governments for the purpose of suppressing strikes, perhaps. But this is not the rule. Of course they have often been used to maintain the peace, and where the strike could not be kept up without disorder and violence, the effect of maintaining order might have suppressed the strike, but there is a difference in principle.

It is high time that careless and ignorant general assertions of the worthlessness of the National Guard should be discontinued, especially by friends of national defense, as we have enough to contend with from the opposition of anarchists, disarmament cranks, "short haired women and longhaired men" and mollycoddles generally. The guard is not perfect; it has its defects both in organization and training, but is far from worthless, and it, with our little army, is all we have at the present time. It is composed of the only body of men in the country with sufficient patriotism to endure free and voluntary military service in time of peace, in the face of insult, abuse, sneers and misrepresentation. When a better system is devised these same men will be willing to embrace it, but meanwhile they are doing what they can in a practical way to aid the national defense; the others merely stand around and find fault.

I do not intend this as a personal attack on Mr. Thomas. I enjoy reading his articles generally; but I have been sacrificing my time and energy for many years to help build up the organization which Mr. Thomas disposes of in a dozen words of bare assertion.

G. R. LOVEJOY,
Washington. Major 2d Inf., N. G. W.

Marble's Chamber in the .22 H. P. Savage

Editor Outdoor Life:—I have at present a Savage .22 high-power with pistol-grip stock and a Remington .22-caliber long-rifle repeater, No. 3, equipped with Sheard's gold bead, 1-16-inch front, and King's No. 8 combination rear sights, and I find these sights good on a 24-inch barrel. I use a Marble's chamber to shoot the long-rifle cartridge in my .22 high-power. This shoots as accurately as a .22 Remington at usual shooting distance, but to shoot it one needs to move the Savage micrometer rear sight one degree, or mark, to the right, as the high-power bullet has a different drift than long-rifle cartridges. It cost me about sixty high-power cartridges before I found this out, having set the sights for the long rifle. But let me add, if using long-rifle cartridges in .22 high-power, keep the barrel clean. If you don't, leading may result.

I have no trouble to keep mine clean. A brass brush, Marble's rod, some good oil, rags and elbow grease does it. I use Savage copper-jacketed, high-power ammunition exclusively now, as I found out by experience with the first .22 high-power I had, cupro-nickel ammunition was not satisfactory.

NIC G. JOHNSON.
North Dakota.

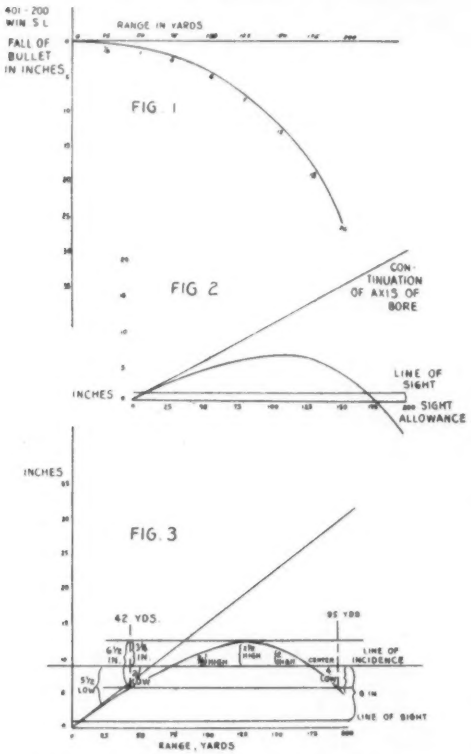
The Negative Angle Sight Again

Editor Outdoor Life:—One or two contributions on the negative angle sight have appeared in Outdoor Life during the last year or two. Some sportsmen may have assumed that a special kind of sight, or set of sights, is necessary for the application of this principle, but as a matter of fact it can be applied with any sights.

The principle of the negative angle aiming is that the rear sight is elevated somewhat higher than the front one, so that the line of sight and the line of axis of the bore converge a few yards in front of the muzzle, and the shooter then aims a fixed distance below the point he desires to hit, regardless of the range (within limitations). This style of aiming is of no use in fine shooting such as shooting off the heads of squirrels or grouse, but for hunting game of good size, where three or four inches leeway above or below a given point may be allowed and a hit still be effective, the negative angle principle has advantages over the ordinary method, in that it gives all the accuracy needed over a considerably greater range.

To illustrate: Suppose one wishes to hunt deer and bear with a .401-200 Winchester at ranges running from 50 to 200 yards. This is a rifle of rather high trajectory as the smokeless rifles go, the trajectory at 50 yards when shooting at 100 being 1 inch and the trajectory at 100 yards when shooting at 200 being 6½ inches (Winchester figures 1.01 and 6.47). This means that the bullet has a fall of four times these

figures, that is, a fall of 4 inches at 100 yards and of 26 inches at 200. These figures are accurate enough for practical purposes. The falls at every 25 yards from 0 to 200 are approximately as follows: 25 yards, ¼-inch; 50 yards, 1 inch; 75 yards, 2 inches; 100 yards, 4 inches; 125 yards, 7 inches; 150 yards, 12 inches; 175 yards, 18 inches; and 200 yards, 26 inches. This may be graphically represented as follows:



Suppose we sight this rifle to strike center at 175 yards, using the customary style of aiming. We want to shoot up to 200 yards without raising sights or holding over and 175 yards is therefore the least range at which the rifle can be sighted. We will assume that we are using a front sight 1 inch higher than the axis of the bore. The result appears in Cut II. It appears that at 100 or 125 yards the rifle shoots 6 inches above the line of aim, and that at 200 yards it shoots nearly 6 inches below it. This is not accurate enough for our purpose, and we shall either have to limit our shooting to shorter ranges, or hold over or elevate our sights.

Now suppose we raise the rear sight until at 175 yards the bullet will strike 8 inches above the point aimed at and leave the sight fixed at that elevation. We have converted our ordinary rear sight into a negative angle sight. The result appears from Cut III. The line which is the continuation of the axis of the bore ranges up sharply and cuts the line of sight only six or seven yards from the muzzle. Eight inches above the line of sight I have drawn another line parallel to the line of sight, which is labeled, for want of a better name, the line of incidence. It will be seen that if we aim eight inches below the point we wish to hit, we shall not miss that point over about three inches at anywhere from about 45 to 195 yards. This will be accurate enough for the kind of hunting we assumed we were going to do. At very short range, say 20 yards, we should undershoot several inches if we aimed the usual eight inches low, but we have assumed that most of the shooting is to be done at between 50 and 200 yards and as a matter of fact those limits mark the ranges at which a very large proportion of game is shot with the rifle. In case of a rare shot at less than 40 yards, one would be safe if he held four inches low instead of eight, but such shots are expected to occur very seldom. For a man who is cool enough to remember about the eight-inch allowance, and the less amount at very short ranges, this principle will add 15 or 20 per cent to the effective range of the rifle without the necessity of making any estimates of range.

California. JOHN OUTCALT.

Comments on Certain Single-Shot and Repeating Arms

Editor Outdoor Life:—I have often wondered how Mr. J. B. Tighe is getting along with that "dream rifle" so feelingly described in the June number of Outdoor Life? I have some interest in the matter because I also was the unfortunate purchaser of one of those single-shot Winchesters sold by the National Rifle Association and using the U. S. model '06 .30 cartridge. I did not have my rifle dolled up as described by Mr. Tighe, but that should not affect its innate cussedness to any great extent. My greatest trouble has been the failure of the extractor to pull out the empty shells. Always had to carry a rod to punch them out, and it was not always easy to get the action open. The block springs back at the discharge and then springs forward and wedges the shell so tight that no ordinary extractor can budge it. I wrote the Winchester company about it but they would suggest no remedy—probably because they knew the action was never designed to handle cartridges of that class. It is my opinion that the .30-40 is about the limit that can be successfully used in this

arm, and I have an idea that the makers know it, and so have not furnished the rifle regularly for ammunition of greater power.

As to accuracy, I believe the Springfield can give the Winchester cards and spades and beat it any day. Anyway, the American team did not do much good in the "free rifle" match at Perry in 1913. I believe the theory of Mr. Newton in regard to the one-piece stock is correct. High-power rifles produce too much vibration to give great accuracy when the strain all comes on the unsupported receiver as it does in the Winchester. The Springfield is much pleasanter to shoot and I think the excessive vibration of the Winchester makes the difference.

Mr. Tighe gives an imposing list of cartridges that he expects to use. They are all fine, if they will just work in his gun. The Springfield '06 is certainly an excellent cartridge to reload and experiment with. The great variety of powder and bullets makes endless combinations possible. For the longer ranges we have this season been using 51 grains of the new No. 15 Du Pont with the 180-grain U. S. match bullet. This load has given excellent satisfaction and is pleasant to shoot, not giving perceptibly greater recoil than the service load.

Why does a man want to carry a heavy, awkward, unreliable single-shot rifle when he goes hunting? Either the Mauser or Springfield is lighter, handier, prettier and more reliable even if used exclusively as a single-shot, and there might occur a time when a magazine full of cartridges would be a life-saver.

CAPTAIN LINCOLN RILEY.

Nebraska.

Using The Single-Shot Rifle on Game

Editor Outdoor Life:—Re Mr. Haines' comments on my article on "The 'Old Reliable' Up to Date": He seems to have misunderstood the uses to which I intend to put the rifle. He says: "If a hunter has arrived at that place in his career where he can be certain that he will seldom, or never, fire at a head of big game unless it offers a standing shot, or one practically as easy . . . then he can safely tie to the single-shot."

He is mistaken in thinking that I will take only standing shots. I will take any running shot with the single-shot that I would take with a repeater or auto, and would not take any shot with the latter at running game if there was not a reasonable chance of hitting it. Would sooner let a deer go un-shot-at than take the wild shots with a repeater at a flying deer thru brush (brush between deer and myself), as so many people do who go to the woods. Would sooner pass up a chance like that than wound a deer—or possibly another hunter—by a fluke, with wild shooting. The only difference the single-shot will make in my hunting will be that I will take all running shots as though using a repeater but will not have quite so fast a second shot should I miss, and if I hit I will either kill or so badly wound that another shot will be easily possible from the single-shot, and, believe me, it won't take long to get another shell into that old smoke-stick. I carry five shells on a wrist strap around my left wrist, and sometimes one shell between my first and second finger on left hand, head of shell inside hand against forearm of rifle with point of shell sticking thru fingers, from whence it can be quickly plucked. The only difference with the single shot over repeater will be that if I miss the first shot the deer will have a better chance of escaping than if I had a repeater, and I am willing to give it that sporting chance and depend on my first shot getting the meat. Remember, I am talking of deer hunting only. I do not recommend a single-shot rifle for moose, grizzly, African dangerous game, or for a man who is not a fairly good shot and has to spend a large sum to get to the big game fields, but simply for the hunter who lives in the game country and hunts non-dangerous game. There will be but few hunters who would like to get back to the single-shot, or, rather, adopt it, those who have used it in the old days know its capabilities and perhaps would not be so hard to wean back to its use.

Some may object to the extra weight of the No. 3 barrel; for such, if they like a single shot, I believe the Winchester people will put on one of the regular .30 caliber barrels as supplied on the 1895 model. Personally, I prefer the heavy barrel, as there is practically no flip, it steadies quicker, the barrel is the same thickness, has no taper which causes the fore sight to be way up in the air, and gives better accuracy. The weight of 9½ pounds does not bother me, and I hunt in a hard country. To those who prefer a repeater, would recommend either an 1895 model Winchester, .30 '06 shell, or a Springfield rifle worked over, or a Sauer-Mauser chambered for '06 cartridge. You will then have one of the most accurate cartridges in the world, if not THE most accurate and one that will give sufficient shock and killing power for any American game. It also admits of many variations in the load, and you can get the U. S. government tables for it of elevation and other ballistic data.

As improvements to the single-shot rifle, would suggest one with a more powerful extractor than the Winchester single-shot, and one that would have a falling block that would take hold of the shell when about two-thirds of the way into the chamber and force it forward and home, if tight-fitting, and in extraction throw the empty shell clear. Then a tight-fitting shell would not have to be forced home with the fingers before the bolt exerted any pressure, as at present. In short, a falling block that as the action opened would come to the rear and down, and up and forward in closing; this, with a good, powerful extractor, hammer centrally hung, but the receiver built up to enclose the hammer better than at present, to keep out snow and wet, would, I think, make the "Old Reliable" better than it is at present. I still like it, as I do my single-action .45 Colt, and I have been thru the "auto" stage pretty well.

I find the Vickers-Maxim aperture foresight, as made by Mr. L. A. Danse, Indianapolis, Ind., very good and quick on this rifle in combination with the rear Lyman micrometer tang sight.

Have never seen any hunter recommend carrying an extra front sight in the hollow under the butt plate; also an extra firing pin, together with oiler, pull-thru, and an extra cartridge.

Hunting with my single-shot Winchester and the .30 '06 cartridge with Newton expanding bullet (170-gr.) I believe I can kill more deer on the average than under the same conditions were I armed with a .30-30 repeater or similar gun; but would kill more game with a repeater taking the .30 '06 cartridge than with the single-shot taking the same shell. A very large majority of my kills with a repeater have been with the first shot, and they have all been running shots where the game was deer; for, strange as it may seem, though I have many times shot at deer standing, I have always missed, connecting later, if at all, on the run. I believe the cartridge is the most important item; next an accurate barrel accurately sighted (for the sights are the eyes of your rifle); then the proficiency of the shooter; lastly the action, whether automatic, bolt or lever repeater, or single-shot, in deciding how many heads of game a man will kill out of a certain number shot at. In short, quality (killing power of bullet and accuracy of hit), and not quantity (number of shots) is what counts most. J. B. TIGHE.

British Columbia.

Quick-Draw and Other Short-Gun Talk

Editor Outdoor Life:—It's a fact, it has been raining nice and slow for about fourteen hours in Arizona, but I have August Outdoor Life, so let 'er pour. I want to see Mr. Thomas break into print, also Mr. Altsheler and anyone who can give us six-gun talk or high-power rifle talk. The argument about the spitzer, tho, has hit some of us hard. I would like to hear more. I have a .30 Winchester carbine using 1906 shell. Have a lot of the regulation shells (spitzer) but have never used it on game yet; was intending to file off down to the lead.

My .22 high-power has killed over 25 deer and only two showing blood got away. I never saw any gun do better work. My friend Bill shot most of the deer. I would rather have my '95 Winchester using '06, than any, considering the getting of cartridges and price of gun.

Mr. Thomas may be right about the .45 single-action being better in skilled work than the .45 automatic, but $1,000 wouldn't make me give the auto for his single; this is why: If you are shooting at least two or three times a week 25 to 200 rounds from your single-action hog-leg, then the drop is O. K. and you can do the work; but lay off a month and see. Now, skilled hands means practice by the hundreds; why shouldn't the skilled man be able to handle the auto better than the single if the unskilled one can?

My .45 auto is the only six-gun I ever owned, and was perfectly satisfactory. I have no kick. I filed the trigger pull down one-half and she has never kicked off yet. My trouble was in getting a belt holster. In the regular holster when drawing quick the flat handle lies so close to the leather on inside of holster that your fingers don't get a grip in an instant as they do on a single-action with its plow-handle. I cut this off, leaving the gun only a narrow band of leather to swing to the belt. This is fine, but lets gun swing around too much and is too loose (a little) on a loping horse.

Who has found a satisfactory holster for quick drawing? Let's hear about quick drawing from someone with the real stuff—no corral dust. Take your friend (I practice alone first), put a can or man-size target 15 or 20 feet in front of you, both facing target with gun in your hip or where you like best; throw a rock up behind you; don't watch it, but when you hear it hit go after it and see who slips a bullet or two in first. I know lots of good shots, sheriffs, etc., but they are deathly slow on the draw, and a few inches on a target won't beat a half-second on the draw. This trick you can use shooting from hip or

bringing gun to level. Now, use your left hand, and see how much of a gunman you really are? My! I would like to be with Mr. Thomas and his friends for a shoot-fest, altho I know I would get beaten; still it would show a fellow how much he had to improve. I have a very small hand; this accounts for my disliking the S. A. .45 as I cannot manage it. Mr. Thomas is right—get the gun that fits your hand and don't change. ARIZONA.

Arizona.

Confined Air, Air Waves and Vacuums

Editor Outdoor Life:—I see in the August, 1915, number of Outdoor Life an article by "Bill," of Wyoming. He wonders if I ever thought of how the air acts around and on a moving projectile. Well, I have thought some on the subject and I have reasons to believe I am correct. My reasons are these: We find a result and there is a natural cause for that result. If we try to use a very long bullet in a gun the result is that it will not keep point-on, but will keyhole at short range. Now, the only cause I can see for this is, the air does not touch the bullet except at the point. If I am correct, the result we have found would be natural enough, and I freely acknowledge this is only theory, and if not correct, if Friend Bill will put me right, he will surely do me a favor. Now, I wish it understood that this answer to Bill's article is on friendly terms. I admit my drawings are very poor. I did not intend them to give the size of vacuum, but to show there was such vacuum. Bill's drawing doesn't prove the contrary, neither do the photographs mentioned prove it, as such vacuum would hardly show thru the air waves. Neither do the air waves that are shown far from the bullet's path show the contrary, for, if I am correct, those air waves would naturally be there, for the air is very flexible and moves easily, or there would be no air waves so far from the bullet's path.

Now I don't want to make fun of Bill any more than he does of me, but his article makes one wonder if he ever experimented with long and short gun barrels. The effect supposed to have been found by loading an iron pipe 32 feet long by Sir Andrew Noble is a new one on me. If he is correct, the longer the gun barrel the less velocity a bullet or charge of shot would have, owing to the force required to force the air out of the long barrel, but my experience is that the longest gun barrel I have ever tried was an advantage as far as velocity is concerned. The long cannon gives the greatest velocity—and there is some length to them. Now we will reason on these lines: Say a gun crank makes a shotgun, 12-gauge, with a barrel 100 feet long. We take an empty shell, put in a good charge of powder, then a good wad, and insert the blank load. I suppose Bill would be afraid to stand at the breech of the gun and pull the trigger, while he may not be afraid to be looking down the gun barrel while I pulled the trigger, for I would feel safe in firing the gun. Now Bill says when this charge was fired as in a gun the long column of air supported the charge as the breech of a gun would, and the charge went out of the short end, scarcely moving the wadding behind it. This fact would have a tendency to set a man thinking. Yes, if it was a fact now, I would advise Bill to get a long iron pipe, load as described, fire same and prove to himself that it is not a fact. As to myself, the story doesn't arouse curiosity enough for me to try the experiment. I am aware that the air in gun barrel has some resistance but not to much extent until the bullet or charge of shot has been forced some distance from the breech of the gun, no matter what its length may be.

If Bill will read my article again and then get the description of the high-power .22 turned out by Charles Newton he will see Mr. Newton is making the very gun I described, except the bullet is 10 grains light. I wrote that article some months before I knew Mr. Newton was going to make a .22 high-power, so I believe you will see that both Mr. Newton and I have done some thinking and experimenting as well. I predict this little .22 high-power will be powerful enough to do good work on any game we have on this continent, but not so powerful as Mr. Newton's other cartridges. It will be my favorite.

It seems that Bill has the idea that I believe the base of a bullet traveling at high speed may, if long enough, be supported by the air. Well, I also think the idea is erroneous, because I believe one can never be used long enough to come in contact with the air at base; that is why I suggest the long point with true taper, so the bullet will be strongly supported by the air. You will notice that the spitzer with its long point and present form, with its curved point gives greater accuracy than any other bullet. To my mind this is because it is supported by the air a greater part of its length, also has much less air resistance. WILLIAM HAWS.

Alberta.

ARMS & AMMUNITION QUERIES

I understand that there is being tested out a Colt revolver put out by the Colt Fire Arms Co. since the army revolver was issued. Can you give me any information concerning this? I noticed by press dispatches that it was being tested by army officers. Any information that you can give me will be appreciated.—Ralph E. Leighton, Twin Falls, Ida.

Answer—We know of no such weapon or tests.—Editor.

Can you send me data regarding the sighting and use of the model 1901 rear sight on model 1899 carbine (Krag)? I have the 25-yard setting which I wish to use as the base of operations. The relation between the markings on side of base and on tip up scale I do not know, nor between bar and peepsights. Are the markings for fractions of angle of bullets departure or merely arbitrary marks for range? Would also like table of minutes of angle for ranges to 600 yards. Can the drop of a bullet, that is, distance one must hold over a target at any range, with sights at zero, be figured from the trajectory tables?—W. S., Rainbow Dam, Mont.

Answer—The open sight on the Krag is correct for 100 yards, and the graduations are in yards. Both the peephole and the open notch used when the leaf is raised have lines at the sides to align the sight with the graduated scale at the sides. The figures at the sides indicate the range in hundreds of yards. The angle of departure of the bullet from the Krag carbine is as follows:

Range	Degrees.	Min.	Sec.	Actual trial with rifle Minutes
100 yards	0	4	53	
200 yards	0	10	33	
300 yards	0	17	13	9
400 yards	0	25	2	16
500 yards	0	34	14	24
600 yards	0	44	55	34

The above table for the carbine is that of the computed angle. This is about 10 per cent more than the computed angles for the rifle. In the right hand column is given the actual results obtained by firing the rifle showing the computed angles much too high. There are no tables of angles for the carbine made from actual firings given in the handbook. By comparison, however, subtracting 10 per cent from the computed angles for the carbine and comparing the result with the actual figures obtained from the rifle a very close approximation may be obtained. This, of course, involves using ammunition with the standard bullet and at the standard velocity.—Editor.

I would like to ask some questions: (1) Will the 150-grain pointed bullet work thru the magazine of the 30-40 Winchester without catching if it is the same length or a little shorter than the regular cartridge? (2) Will the 150-grain bullet that measures .308 or .3085 shoot accurately in a 30-40 that measures .309 or .310 if used with 38 or 40 grains DuPont No. 20? (3) Will the .308 bullet in a .310 barrel upset enough to prevent gas cutting when fired at 2,400 or 2,500 ft. sec. velocity? (4) How small a group will it make at 200 to 500 yards? (5) I understand that a 30-40 made six or eight years ago measures about .310 and alloy or gas check bullets work fine in it, but the 30-40 barrel now measures .308 to the bottom of the grooves, and is chambered so close that a .311 cast bullet cannot be used in it. Can the .311 bullets be used in the Winchester chambered for the 1906 cartridge? (6) Is there much difference in the size of the groups when fired from the Springfield or Winchester, using the 1906 cartridge 150-grain pointed service bullet? (7) What is the average size of groups at 200 to 500 yards, made with Springfield and Winchester repeater 1906 cartridges? I would be very much pleased to hear from some one who has tried these things thoroly.—C. L. Butler, Denver, Colo.

Answer—The 150-grain bullet works properly thru the model 1895 Winchester magazine. If loaded as you state it should shoot accurately in the Winchester barrel, the pressure being sufficient to upset it and make a close fit. However, would not expect less than 40 grains to give sufficient upsettage to fill a .310 inch barrel. In a Krag rifle this bullet will give about the same groups as in a Springfield. In a sporting rifle it will not group as well, due to the two piece stock. We have not tried it, but think you can use the .311 bullet in a Winchester repeater. The writer has a single shot Winchester, chambered by that firm about six years ago, and it handles metal patched Savage .303 bullets measuring .311, seated in Springfield shells, easily. The Springfield will make the closer groups for the reason above mentioned.—Editor.

I want to duplicate Mr. P. C. Peterson's stunt described in the July number, only with a .22 h. p. Savage barrel, and would like your advice as to whether the 50 cal. Remington pistol would stand the racket from the 22 h. p. cartridge safely if Mr. Peterson's .25-35 does?—Thos. Lane, Seattle, Wash.

Answer—The 25-35 cartridge develops a pressure of about 30,000 pounds per square inch. The .22 Savage high power has about 45,000 pounds. The inside diameter of the shell at the head is the same, so the .22 would impose about 50 per cent more strain on the action than does the .25-35. Whether or not the pistol would stand it we could only guess, and we do not like to guess when others face the music. If we blow our own fool head off we know who is responsible and pass to the happy hunting grounds while the wife gets the insurance. If we advise someone else and he gets his, we want no sorrowful widow casting mournful eyes in our direction; we want to eat and sleep in peace.—Editor.

---

(1) What is the muzzle energy of the .38 automatic Colt pistol? Isn't it as powerful and as accurate as the .38 S. & W. special? (2) Will the above automatic function properly with reduced charges of hand-loaded ammunition?—F. A. Jenks, Munnville, N. Y.

Answer—The energy of the .38 Colt automatic pistol is 398 foot pounds at fifty feet from the muzzle, that of the .38 S. &

W. Special is 257 foot pounds. These figures are taken from the tables in Mr. Himmelwright's book. The automatic will not function properly with loads very much reduced. It might be helped somewhat by weakening the return spring. If you do this do not forget it and use full power charges, or trade it off without putting in a new spring—Editor.

Please give me the ballistics (velocity, energy, trajectory and time of flight) for the .30 Luger (foreign and domestic, if there is any difference) and .45 Colt (200 gr. and 230 gr.) automatic cartridges up to 200 yards. Each maker claims his automatic is the "most powerful made," and, if energy is any indication of power, I want to decide for myself. I consider yours the best sporting magazine published, and I subscribe for seven.—Charles H. Pond, Jr., Pelham Manor, New York.

Answer—The following are the ballistics of the three different cartridges mentioned. The velocities are taken from Mr. Himmelwright's book, and the coefficient of form of the bullets are all considered as 1.00. The velocities are foot seconds; energies in foot pounds; trajectories in inches and time of flight in seconds.

Range.....	Velocity Ft. Sec.....	Energy Ft. Lb.....	Trajectory Inch.....	Time of flight Sec.....
Colt .45-200—				
C. equals .14—				
Muzzle	910	368		
100 yd.	814	300	5.9	.35
200 yd.	728	240	26.5	.74
Colt .45-230—				
C. equals .16—				
Muzzle	809	335		
100 yd.	734	276	7.2	.388
200 yd.	663	230	32.3	.82
Luger .30-93—				
C. equals .14—				
Muzzle	1173	284		
100 yd.	1000	205	3.7	.278
200 yd.	886	167	17.3	.60

—Editor.

I am a constant reader of your splendid magazine, especially Arms and Ammunition section. I would like to know how to calculate the range of a bullet, fired from an angle of 45 degrees and enclose stamps for reply—if convenient for an early reply.—C. F. Vardon, Quebec, Canada.

Answer—We know of no method of calculating range from a given angle of elevation. We may approach the problem from the other end and calculate the range first and then determine the angle of elevation necessary to produce that range. This is done by means of tables computed for that purpose. However, in case the maximum range were reached at an angle of less than 45 degrees we would be unable to go farther. If you will write the ordnance department for "Artillery circular M, with supplement," you will get the ballistic tables necessary. Then get Major O'Hern's work on "Exterior Ballistics" in use as a text book at West Point academy, consult the chapter on high angle fire, and you will have mathematics enough to last thru one long cold winter. Lissak's "Ordnance and Gunnery," published by John M. Wiley & Sons of New York city will also be of assistance. We tried this once and speedily reached a height where the rarefaction of the air caused heart disease and we slid back to earth, pronto. Nevertheless there is a great deal of pleasure for the mathematical sharp in working out the formulas involving the varying resistances due to the rarefied air of the higher strata—Editor.

For an all around sporting rifle what do you consider best in this part of the country, and why? .30 U. S. Springfield, .30 Newton 172 gr., .30 Newton 250 gr., .30 Adolph 150 gr. and 172 gr., 280 Ross. I want a rifle that can be used with satisfactory results on any large game I am apt to meet in the mountains near here. Can the various cartridges mentioned for these arms, except the Ross, all be used with success in the Newton gun, and if not, why, they being all the same caliber?—Edwin Clayton, Salt Lake City, Utah.

Answer—The .30 Newton and .30 Adolph cartridges are the same so far as ballistics are concerned. They use the same bullets and at the same velocities. The .30 Adolph uses an imported shell necked down and an imported primer, and must be purchased as a special shell from Mr. Adolph, while the .30 Newton shell is manufactured in this country, uses regular American primers and is regularly on the market as a standard cartridge. Comparing the .30 Springfield shell with the .30 Newton the advantage is in favor of the latter. It uses a 170-grain bullet at 3,000 f. s. velocity and a muzzle energy of 3,440-foot pounds, while the Springfield uses a 150-grain bullet at 2,700 f. s. velocity and an energy of 2,445 foot pounds, or 40% more power in the Newton cartridge. The heavier bullet likewise holds its velocity and energy better, so that at 300 yards it has 2,287-foot pounds to the Springfield 1,392-foot pounds or over 64% more power. As between the Newton 170-grain bullet and the 225-grain weight, the latter is best for extreme ranges while the former has a flatter trajectory and almost the same energy over game shooting ranges. As between the .30 Newton and the .280 Ross, there is little choice so far as cartridges are concerned except that the .30 Newton has 438-foot pounds more energy at the muzzle and retains it to about the same extent. It is merely a choice in power. The trajectories are substantially the same. So far as cartridges are concerned it is a choice between initial energies of 3,000-foot pounds and 3,440-foot pounds. So far as the rifles are concerned the Ross is a straight pull bolt action, while the Newton uses the rotary bolt, well known in the Mauser and Springfield for its power in seating and extracting shells. The Springfield and Newton shells cannot be used in the same rifle, as the Newton shell is of larger diameter, altho the Newton rifle is also made for the Springfield shell.—Editor.

Just to satisfy myself, and if not too inconvenient, could you tell me, or give me your opinion: Question: Is the energy of a bullet same caliber fired from an automatic gun or solid breech the same; in other words, which, if any, the harder hitting. I mean both shells loaded the same? Does the recoil of an automatic gun lessen the energy of the bullet?—H. F. Phillips, Sioux City, Ia.

Answer—It is our understanding that the automatic functioning of the breech does not in any way detract from the energy of the bullet fired from a given cartridge.—Editor.

Do you know if the .50 Remington pistol is strong enough to handle the .22 H. V. Savage cartridge or the .25-3000 Savage cartridge?—William J. Molloy, Chicago, Ill.

Answer—We have never heard of using the .22 Savage cartridge in the Remington pistol. We apprehend it will be strong enough to stand the racket, but would not recommend others to try it. We feel that you would require a very heavy barrel or the recoil would be sufficient to almost throw the pistol out of the hand.—Editor.

Could you kindly give me the following ballistics in the next issue of Outdoor Life? I would like to know the velocity, energy and penetration of the following cartridges: Savage .22 high power, Savage .250-3000 h. p. s., .256 Newton, .280 Ross Eley, 6.5 mm. Mannlicher, 8 mm. Mannlicher, .30 Adolph, .33 Adolph, .35 Adolph, .40 Adolph and .404 Jeffrey, .40 Newton and .400 Cordite, 9 mm. Mannlicher, 11 mm. Mannlicher or Mauser. I have never been able to ascertain the exact figures of these fifteen cartridges. I would like to know the penetration of the full metal patched bullets with these cartridges. —M. R. Waterman, Jr., Pueblo, Colo.

Answer—The Mannlicher cartridges mentioned are the same as the Mauser cartridges given in the following table except the 6.5 mm. caliber. The .30 Adolph, .33 Adolph and .35 Adolph are the same as the Newton cartridges given in the table. The .400 cordite is an English cartridge and is loaded in so many ways that the figures would only be misleading; one firm loads it with 300-grain bullet at 1950 f. s. velocity and having a muzzle energy of 2,550-foot pounds (Eley's). We have no definite data on the 11mm. Mannlicher cartridge. The penetration of these bullets is not as a rule given by makers, and it would require a complete battery of rifles and a lumber yard to take them ourselves. However, we trust that the data in the accompanying table will be of some interest to our correspondent as well as to our other readers:—Editor.

What is the comparative accuracy of the .41 Colt cartridge when used in S. A. Colt, 7½-inch barrel as compared with .38 Special, .44 Russian and .45 Colt cartridges? I have a .38-40 7½-inch Bisley Colt that is nearly new and I am greatly interested in target shooting, but the .38-40 cartridge is not accurate and is unpleasant to shoot on account of the heavy powder charge. Now, what I want to do is get a .41 cal. cylinder and put in my gun so as to use a factory load that is not so heavy (21 grains). I think the .41 bullet ought to shoot better in the .38-40 barrel than in regular .41 barrel, as it is .006 smaller than the .41 barrel and the .41 bullet would not have to expand so much—L. C. Turner, Fort Worth, Tex.

Answer—At the time it was developed the .41 Colt cartridge was as accurate as other cartridges. That time, however, was long ago, and since that time much thought and effort has been expended in improving our revolver cartridges, and great advances have been made in their accuracy as well as in other qualities. These improvements have, to a great extent, been concentrated upon the .38 caliber and the .45 caliber, and as a result, particularly in smokeless powder ammunition, they are decidedly more accurate than are any of the older cartridges. The .44 S. & W. Russian cartridge was always the most accurate of the black powder cartridges for target work, due to its comparatively light powder charge, which also made it lacking in power for serious work. The .38 and .44 S. & W. Specials are later productions and ideal for black powder and very good with smokeless, especially the latter. We would not recommend the .41 Colt, however, owing to the ammunition not being up-to-date as much as the others.—Editor.

I own a .45 automatic Govt. model and about one shot in ten falls away low. Have you ever had any do like that or heard of any doing so? The ammunition was U. M. C. as issued to the navy. How small a group will

Range— Bullet—	.22 Sav. H. P. 68 gr. C.-.26	.250 Savage 87 gr. C.-.276	.256 Newton 123 gr. C.-.464	.280 Ross 145 gr. C.-.457	6.5 mm. Mannlicher 163 gr. C.-.374	8 mm. Spitzer 146 gr. C.-.329	8 mm. Spitzer 154 gr. C.-.347
Muzzle.. Velocity, f. s.	2800	3000	3103	3050	2400	2998	2915
Energy, ft. lbs.	1190	1740	2632	3002	2086	2920	3018
100 Yds. Velocity, f. s.	2453	2657	2891	2837	2176	2708	2646
Energy, ft. lbs.	911	1375	2288	2710	1728	2394	2402
Trajectory, ft.	.052	.045	.04	.042	.068	.045	.046
200 Yds. Velocity, f. s.	2131	2340	2689	2635	1962	2437	2392
Energy, ft. lbs.	687	1061	1980	2247	1386	1927	1956
Trajectory, ft.	.242	.204	.173	.180	.307	.199	.206

Range— Bullet—	.30 Newton 172 gr. C.-.491	.33 Newton 200 gr. C.-.395	.35 Newton 250 gr. C.-.400	.400 Adolph 300 gr. C.-.373	.404 Jeffery 400 gr. C.-.396	.40 Newton H. P. C.-.374	9 mm. Mauser 280 gr. C.-.371
Muzzle.. Velocity, f. s.	3000	3000	2975	2867	2200	3042	1850
Energy, ft. lbs.	3440	4000	4925	5490	4320	6180	2128
100 Yds. Velocity, f. s.	2804	2758	2737	2619	1997	2784	1660
Energy, ft. lbs.	3010	3400	4175	4590	3560	5220	1708
Trajectory, ft.	.043	.043	.044	.048	.082	.042	.117
200 Yds. Velocity, f. s.	2618	2530	2512	2383	1807	2541	1485
Energy, ft. lbs.	2631	2852	3500	3780	2920	4320	1372
Trajectory, ft.	.185	.188	.192	.211	.362	.186	.527

a .45 automatic shoot at 25 or 50 yards and is it as accurate as the old .45 single action? What is the most accurate revolver or pistol made and on the market?—I. J. Rider, United States Navy, Hong Kong, China.

Answer—We have had many revolver shots fall low, when using any and all kinds of revolvers, attributing it to a flinch, a jerk instead of a steady pull on the trigger, or a difference in the grasp of the hand on the weapon. We have also encountered, in using Frankford arsenal ammunition of both .45 Colt revolver and .38 Colt revolver sizes, cartridges which were obviously underloaded. We have had no trouble with the .45 Colt automatic pistol ammunition in this regard so far. The size group which this pistol will make depends very largely upon the skill of the shooter. In the ordnance department tests in 1907 the mean absolute deviation of this weapon at 75 feet was 2.4 inches, which, of course, means a group considerably over twice as large. We have at hand no later official figures, but feel that the weapon will do far better than this indicates. As to a comparison of accuracy between the automatic and the revolver, target shooters consider the revolver the most accurate. We must, however, consider the great importance in target shooting with the hand gun of the absolutely uniform and proper grasp on the weapon for each shot. This has been acquired by our target shooters with their revolvers. The grip of the automatic is so radically different that we would not expect as good work from it, regardless of its actual possibilities, as from the revolver until it has been used until the same familiarity with the grip as now exists with the revolvers has been acquired. We doubt if any of our target shots have sufficient familiarity with the automatic to be able to determine what its actual merits are. From our own experience we are of the opinion that when it is properly tightened up and it has become as familiar in our hands as is the revolver, it will be found the more accurate of the two. It required several trials before we could do any decent work with the army model. Now we can do as good work as with any revolver we ever used, and believe that when more familiar with it we can do far better. The trigger pull, as issued, is usually an abomination and must be eased up, and the joints where the barrel and casing slide are too loose and should be tightened, but when this is done we prefer it to the revolver for close work.—Editor.

I have two rifles of different make, both shooting the .25-20 S. S. cartridge. One has a .24-inch barrel, the other a .28-inch barrel. Using 20 grs. (bulk) King's semi-smokeless F. F. G. powder, the .24-inch barrel produces a great deal of smoke while the 28 in. produces very little. What would you suggest as the reason for this difference? (2) I have on hand a quantity of empty smokeless shotgun shells, also a lot of semi-smokeless powder. Is there any danger or any unsatisfactory results in using black or semi-smokeless powder in shells having smokeless primers? (3) Have you ever heard or known of leather wads being used in a shotgun to improve the shooting? (4) Do you know whether or not shot concentrators are a success?—E. M. Howard, Topeka, Kas.

Answer—The longer a rifle barrel is the more thoroly is the powder burned and consequently the less the smoke developed. Also there may be some difference in the throating of your barrels by which the longer barrel gives more resistance to the forward motion of the bullet than the shorter, thus more completely burning the powder. Either condition would account for the difference you noticed. There would be no danger of unsatisfactory results in using smokeless primers with black powder. We have never known of leather wads in a shotgun. One device for wadding we have heard gave excellent results is to seat an ordinary card wad over the powder, a black edge wad over this, fill the shell to the lip with granulated cork such as Malaga grapes are packed in. Press this cork down until it is firm, put a card wad on top and then insert the shot. This method when used in brass shells with black powder is said to give a decided improvement in pattern and reduce recoil. We have never tried it personally. While there are many concentrators on the market we have never encountered any which gave satisfactory results.—Editor.

As a reader of Outdoor Life I would like to know if my .12-gauge model 29 S Marlin pump gun, .32-inch full choke barrel, would stand the strain of 3½ drs. of smokeless powder and 1¼ ozs. of shot as in duck shooting. The gun has not been used much and has been kept in good order. I have heard something about Marlin pump guns blowing out at the breech; is that so? What is the best load for duck? My gun has never blown back or given me any trouble like that at all. It works good and is a good shooter. I dont believe that the gun will blow out, but your advice will be appreciated.—Ralph Stough, Ft. Smith, Ark.

Answer—Your Marlin gun will stand the charge proposed without trouble. The best load for duck is a question upon which few hunters will agree. Much depends upon the nature of the shooting and upon the individual qualities of the gun. We would recommend 1⅛ ounces of No. 5 shot and as much powder as you can without breaking up the pattern. Test out the pattern and thus determine the charge. We have never heard of a Marlin pump gun blowing out at the breech.—Editor.

I am going on a camping trip in the mountains, but not after big game, and I want to know what kind of a revolver you would advise to take along. I already have a .22 target revolver, but I want a bigger caliber revolver for all-around purposes, and one that would be ample protection against any animal I might meet in the woods. I am undecided as to whether a .380 Colt automatic would be best or the Colt .38 New Army Special, using the .38 special cartridge. Which would you advise? I do not like the S. A. Colt or S. & W. (2) Can the average man shoot more accurately with the automatic or the double action revolver, using both models as single action and double action guns? (3) Is the Colt .38 New Army Special considered a more accurate shooting gun than the Smith & Wesson .38 military model? (4) I am thinking of buying another .22 target revolver, and think I will purchase one of the new .22 target revolvers, which is made on a .32 frame, which I believe is called the Bekeart model, but I hesitate because the barrel is made only in the 6-inch length, and I do not like the stock. Could this barrel be cut off without hurting the accuracy of the gun or the rifling of the barrel? (5) Would the cutting off of the barrel mar the beauty of the barrel? (6) Could the sights be placed back so as they would be accurate? (7) Could you give me the names and addresses of two firms or gunsmiths who cut off barrels and who also make special stocks for target revolvers? (8) What would you approximate the cost

of cutting off this barrel and replacing the end sight? (9) What is the average price for a pair of special wood stocks made for a target revolver of this kind?—F. V. D., Stamford, Tex.

Answer—The most accurate work can be done with the .38 revolver as a single action. As a double action the automatic might work more rapidly with the same degree of accuracy. We would advise the revolver with .38 special cartridge. The question of accuracy between Colt and Smith & Wesson depends entirely upon which style of grip fits your hand best. You can cut off the .22 S. & W. barrel, but it is something of a job to replace the foresight—not from the standpoint of accuracy, but of appearance. The barrel itself would look as well after cutting off as before. Would refer you to H. M. Pope of Jersey City, N. J., and A. O. Zischang of Syracuse, N. Y. We could not estimate the charge as it is practically all for replacing the front sight and depends upon how they do it. The special target stocks usually cost about $1.50 per pair.—Editor.

As a reader of Outdoor Life, I am taking the liberty of asking you a few questions regarding my recently purchased .22 S. & W. Bekeart revolver. This revolver I purchased several weeks ago, and am having the following trouble with it: Holding the gun the way it naturally fits into my hand, when I lower it onto the target, I find the sights always out of line, with the front sight always away off to the left. Then to get the sights lined up, I have to twist the gun around so that the muzzle is twisted to the right and then the sights are in line. Have tried many different ways of gripping the gun, but always have this trouble. Holding the gun the way I naturally hold it, the sights are never in line, with the front sight always off to te left. This naturally makes it very difficult to hold the gun on the target right, and is hardly conducive to good shooting. Sights are set to shoot at 20 yards. Have to hold gun twisted off, and if I forget, front sight slips back to the left. Can you advise me if you have ever heard of any such troubles with this gun? I have a rather large hand with large, long fingers. I am inclined to think it is the grip, but would like to have the benefit of your experience. I would be very much obliged for any information or advice you may offer.—L. N. Eckart, Youngstown, O.

Answer—This is evidently a case of the grip of the gun not fitting your individual hand. As has been so often stated thru these columns, there is as much difference in the shape of hands as of feet, and we would never think of having everyone wear the same shaped shoe. With the majority of people this revolver lines up all right. We would suggest your endeavoring to find some method of gripping the gun by which it would line up properly. Failing in this would suggest that you put on some larger wooden side stocks, then cutting them down until you got a grip which would fit your hand, and line the revolver up properly when thrown up naturally.—Editor.

---

(1) Do you think the continued use of .22 caliber long rifle cartridges would harm a .22 high power Savage with an "adapter?" What adapter would you recommend for above rifle? (3) Are the Ideal composition bullets easier (or less wearing) on the barrel than the Savage factory bullets? (4) Which is the more powerful cartridge, a .45 Colt automatic or a .45 Colt revolver.—Alex J. Bradford, Cambray, N. M.

Answer—We do not consider the .22 caliber long rifle cartridges would injure the .22 high power, provided the chambers of the rifle were kept thoroly clean. The Marble Arms & Tool Company of Gladstone, Mich., make the adapters. The Ideal composition bullets properly lubricated wear the barrel less than the metal case bullets. The .45 Colt revolver is more powerful than the .45 Colt automatic.—Editor.

I am a recent, tho interested, reader of your department and would like to ask your opinion of the .33 Winchester rifle. I bought an 1886 model last fall, but have not used it yet except for target practice. It "carries" nicely, is not heavy and works easily, but I would like to know the longest range it would be effective on deer, that is, if the shot were well placed. Also what would happen if one shot a bear or panther (which are sometimes met here) at, say from 75 to 100 yards, using the ordinary 200 grain soft nosed bullet? I am just taking up the sport and would not like to "start anything that I could not finish." How many rounds would the barrel stand, greasing all bullets and taking good care of the gun?—Lewis Neelands, Victoria, B. C.

Answer—The .33 Winchester model 1886 has been found to be a very effective weapon at the shorter ranges. It has a muzzle energy of 1,877 foot pounds as against 1,970 for our Krag cartridge. However, it loses velocity and, consequently, energy much more rapidly than the Krag, owing to its shorter bullet, but for short range work is very good.—Editor.

As an introduction, will mention that since February, 1911, I have not missed an issue of your very interesting magazine and am a bred-in-the-bone gun crank. Notwithstanding the gun lore I have consumed, I am taking the liberty of asking you for some further information. I have a model '97 Marlin .22 calber, lever action, and a .303 Savage. Can make very good scores with the former at 200 yards, but can't hit a 4-inch bull at 100 yards with the .303 (generally miss the whole target) on account of the recoil. One box of cartridges jars me all over. I weigh only 130 pounds. I want a fairly light weight, accurate, strong shooting arm with a very slight recoil—a gun which my wife can shoot as well without fear of being twisted out of shape by recoil. Will you kindly give me your personal opinion of the .25-35? Is it powerful enough for deer and perhaps small bear such as are found in Wisconsin? I am a careful shot, believing one shot well placed being worth a magazine full fired at random. I like the action of the Savage model 1899, but am entirely unfamiliar with the Winchester 1894 model and possibly it would be the better arm for me to choose. Have also considered the .38-40, but believe it isn't as strong shooting nor as accurate as the .25-35. Absolutely cannot use my .303 and in replacing it will be glad to be guided by your reply and would also appreciate advice as to make of arm which seems most in line with the foregoing. If it has light recoil and will kill deer fairly hit up to, say, 150 yards, it will suit me to a tee.—Warren C. Jewell, Chicago, Ill.

Answer—Your object seems to be a good rifle with light recoil and high efficiency. For this purpose we would choose the .22 Savage high power or the .250-3,000 Savage in preference to the .25-35, altho the latter has accounted for a considerable amount of game. They give far greater energy in proportion to the recoil developed.—Editor.

Prize Fish

1. A big one caught by W. G. Harding, St. Louis, Mo.
2. 10 lb. Mackinaw Trout caught with a Bristol Casting Rod by F. D. Brian.
3. 6 lb. Musk-Pike caught by John C. Wolfe, Zanesville, Ohio.
4. 4 lb. Bass caught on a Bristol in Osage near Siloam Springs, Arkansas by Jack Maxwell.
5. A large catch with a Bristol Rod by Della Glass, Parma, Idaho.
6. 300 lb. Jew fish, length 6½ feet, caught off the coast of Florida by Geo. W. Lyler, Columbus, Ohio. Seven hours to land and I was about as near dead as the fish was, but look at the rod.
7. Lake-of-the-Woods Trout, caught on a Bristol Telescopic Rod by G. P. Calvert, Rainey River, Ontario.

The above are only seven of the hundreds of thousands of Prize Fish brought in every year on "BRISTOL" Steel Fishing Rods.

To hook a PRIZE FISH you need a rod with life, snap, lightning quickness—that's "BRISTOL"—without a peer or even a serious competitor.

To play a PRIZE FISH until he is ready to land, you need a rod with pliancy, resiliency, elasticity; one that will let the fish run but always keep a tight line—that's "BRISTOL"—none like it.

To land a PRIZE FISH you need a rod so sturdy, so powerful, so reliable that it is absolutely dependable in the life-and-death fight when the fish sees the net—that's "BRISTOL" every time. Everyone guaranteed three years.

Don't think it's unimportant. If you want to "bring in" a prize fish (not merely talk about the big one you lost)—get a "BRISTOL". There is a special "BRISTOL" made for your kind of fishing. A "BRISTOL" makes the finest Christmas gift.

Write for Illustrated Catalogue—Free

The Horton Mfg. Company

88 Horton Street **Bristol, Conn.**

I would like the following information: I understand the factory ammunition .25/35 Winchester is loaded with 18 grains of Laflin & Rand's Lightning powder and a 117 grain M. P. bullet. Can this powder charge be increased to 20 grains, using the same bullet without danger in the 1894 Model Winchester? If so, what would be the probable muzzle velocity? Have you any ballistics on the .25-35? Would the .25-35 shell loaded with 23 or 25 grains of Lightning and the 86-grain M. P. bullet be a good hunting cartridge for coyotes and deer? What muzzle velocity would you get with this load?—Clarence E. Smith, Woody, Calif.

Answer—While we were using the .25-35 cartridge considerably we tried out, adopted and used the load of 20 grains Lightning powder with the 117-grain bullet. It gave complete combustion of the powder, pressures entirely safe in any .25-35 rifle, and a velocity of about 2,100 ft. sec. We have not the exact figures at hand, as this was done some ten years ago. Loaded with 25 grains Lightning and 86-grain metal patched soft point bullet we obtained a muzzle velocity of 2,544 feet per second, and at entirely safe pressures. We publish herewith the ballistic figures of the .25-35 load.—Editor.

Range.	Bullet.	25-35-117 C-.245	25-35-117 Rem. Auto C-.245
Muzzle	Velocity, ft. sec.....	1978	2127
	Energy, ft. sec.....	1016	1175
100 Yd.	Velocity, ft. sec.....	1680	1812
	Energy, ft. lbs.	733	854
	Trajectory, ft.....	.109	.094
200 Yd.	Velocity, ft. sec.....	1420	1535
	Energy, ft. lbs.....	516	608
	Trajectory, ft.	.576	.443

Will you please advise me whether it is possible to replace the cylinder of a Colt Police Positive target .22 W. R. F. revolver with a cylinder chambered for the .22 long rifle cartridge without any other changes in the mechanism of the revolver? I find the .22 W. R. F. cartridge rather expensive to shoot very much at target and would like to have the same revolver chambered for the .22 long rifle cartridge. It seems to me that such a change could be made without any change in the mechanism of the revolver, but I would like to know definitely before paying $3 for a new cylinder.—S. W. Strickler, Youngstown, O.

Answer—We understand the cylinders of this revolver will interchange so you could purchase a new cylinder for the .22 long rifle and fit it to your revolver. Would suggest however, writing the Colt factory in regard to it to make sure.—Editor.

Is there any lever action rifle using the .256 caliber shell with 123 grains, and, if so, please let me know the name of the concern manufacturing it? What is the trajectory of the .33 caliber bullet as used in the Marlin rifle at 500 yards? Would this rifle be powerful enough for big game at a far distance?—An Outdoor Life Friend, Laurium, Mich.

Answer—By the above we understand you to refer to the .256 Newton cartridge, but the reply is as equally suitable to the .256 Mannlicher. There is but one American made sporting rifle action, aside from those now in course of manufacture by the Newton Arms Company, which will handle cartridges of the size of those mentioned and this is the model 1895 Winchester. This action when adapted to the Springfield army rifle cartridge has been fitted with .256 barrels by the Newton Arms Company and thus handles the .256 Newton cartridge. The results are not entirely satisfactory, however, since there is so much spring in the action that difficulty is sometimes encountered in using reloaded ammunition, altho new ammunition is said to work very satisfactorily. The trajectory height of the .33 W. C. F. as used in the Marlin or Winchester rifles in shooting at 500 yards is 4.93 feet. This cartridge while quite effective on game at short ranges, loses velocity very rapidly and at the longer ranges is lacking in power. Its energy at 500 yards is 454 foot pounds, while that of the .30-30 is 408 foot pounds and that of the .30-40 U. S. army or Krag 632 foot pounds, and that of the model 1906 Springfield cartridge 932 foot pounds. By way of comparison with high velocity sharp pointed bullets the .250 Savage at the same range has 435 foot pounds, the .22 Newton has 907 foot pounds, the .256 Newton 1,242 foot pounds, the .280 Ross 1,392 foot pounds. —Editor.

Is it possible to secure one of the new Springfield rifles, and, if so, where could I get one and how much would it cost? also where could I get a Lee straight pull rifle and a Stevens pistol, either Lord or Gould model? I wrote the Stevens Arms Company about them, but their reply was that they had quit making them.—J. C. Brennesholtz, Waterville, Wash.

Answer—You can purchase the new Springfield rifle by joining any rifle club affiliated with the National Rifle Association or joining the association as a direct member of the national body. Write to Lieut. Albert S. Jones, secretary N. R. A., Washington, D. C., and he will give you full information. The rifle costs $12.50, together with about $1.25 for packing box and transportation. The Lee Straight Pull rifle was manufactured by the Winchester Repeating Arms Company and they may have a few still on hand, otherwise we would not know where to obtain them, except some of the second hand military models which Francis Bannerman of New York city has in stock. We could not state where to find a Lord or Gould model Stevens pistol as these have been off the market for many years. Would suggest you advertise in the classified columns and you might locate one.—Editor.

I would like to ask you a few questions about three different calibers of rifles. My pet is the 6 mm. Lee S. Pull, but seeing in your July number the velocity and energy will skip it. The other is a 7 mm. German make, has a 21-inch barrel, shooting the 7 mm Spanish Mauser. Stamped on the receiver: "Deutsche Waffen und Munitions—fabriken, Berlin." I was told it is the rifle in use by the German cavalry. What is the velocity and energy? The third is the Lee Enfield, .303 British, model '96, 12 shoots. It had the regulation 30 inch barrel, but have cut four inches off it. Is that the rifle in use in the English army at present? What is the velocity and energy?—William Christinsen, Spokane, Wash.

Answer.—As to the 7 mm. ammunition we had this chronographed using the imported spitzer point ammunition. The 151-grain bullet gave a muzzle velocity of 2,604 foot seconds. This gives a muzzle energy of 2,265 foot pounds. The .303 British bullet has a muzzle velocity of 2,000 feet per second and a muzzle energy of 1,835 foot pounds.—Editor.

When You Go Ducking

Right from the time you tumble out of bed to the time you've finished untangling the leads and putting out the decoys—and then again at night when you come back in the dark after a day's sport, you need an

EVEREADY
FLASHLIGHT

A compact electric light that you can carry in your pocket or keep in your kit. It's wind and water proof; it won't scare the game; it won't start fires—a real, honest light that's made for service and is guaranteed to give it.

Among the 75 styles selling from 75c to $7.50 there's one you'll just naturally want. No. 2632, illustrated, nickel plated tubular light, 1½ x 8½, $1.75 in United States, $1.95 in Canada.

Look for the special displays in dealer's windows October 1st—9th, and write for interesting, illustrated catalogue No. 60.

AMERICAN EVER READY WORKS
of National Carbon Company
Long Island City **New York**

You can make better scores at golf or trapshooting if your arms and shoulders are allowed full and free play. The

SUMMIT
Town and Country
COAT

Has an elastic box plait in the back which gives you this freedom and allows you to move around with ease and comfort.

It's warm, light weight and looks good.

The most practical garment ever made for outdoor wear.

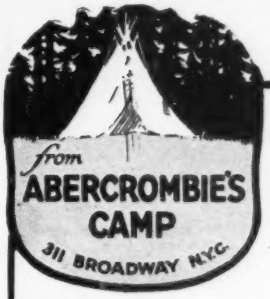
The patented Knit-Nek fits snugly around the throat, the wool Wristlets keep the wind from blowing up your sleeves.

The soft, pliable leather sleeves and leather lining resist the wind and cold.

Get one today!
Sold by dealers everywhere.

Illustrated style book sent free on request.

Guiterman Bros.
Dept. H.
ST. PAUL, MINN.



The Ducks and Geese are Flying South.

Warm and heavy clothing and proper foot gear for lying out in a battery or blind. Light and warm clothing and proper foot gear for snow tracking and snow shoeing in the cold North.

Every kind of Camp Equipment, Tents, Cooking Outfits, Quilts, Sleeping Bags, Camp Furniture, Clothing, Footwear, etc., that are absolutely essential for the Fall and Winter outing. Our twenty-seven years' experience in the manufacture and sale of the scores of necessary articles have taught us what to recommend and what to avoid.

Our Information Bureau has on file the names of Guides whom we have investigated and of good camping places in every part of the country.

Send for catalog Y, showing and describing equipment for all sorts of outdoor life.

DAVID T. ABERCROMBIE CO.

311 Broadway ABERCROMBIE'S CAMP **New York**

Chicago Agents: Von Lengerke & Antoine

NOTE NAME AND ADDRESS

JONES
WATERPROOF HUNTING CAP

A cap that affords real protection and service under the hardest conditions. Made of Olive Green Khaki or Red Flannel, has rubberized lining, which makes it absolutely waterproof. Cap has Fur or Flannel inside band to be pulled down over ears in cold weather. Outside rim also can be turned down, preventing water or snow running down back of neck. This is the best and most practical hunting cap ever made.

Write for booklet of other styles, including Auto Caps. See them at your dealer's. If he will not supply you we will send prepaid on receipt of Express or P. O. Money Order for $1.25.

Do not send personal check.

Mention size wanted and your dealer's name.

PRICE
$1.25

Dept. A.

Beware of Imitations
Look for Label in Every Cap

JONES HAT COMPANY ST. JOSEPH MISSOURI

AMONG THE TRAP SHOOTERS

CONDUCTED BY RUTH ALEXANDER PEPPLE

THE WESTY HOGAN TOURNAMENT.

There once was an Irishman who, true to his instinct, which cruel pride had called forth, was slinging the paint upon his fence in his allotted portion of Pigtown. A fellow Hibernian, passing by, marveled at the haste with which this piece of work was done, and, after questioning the laboring Pat, the latter, all puff and perspiration, replied: "Ah, shure, Moike, an' Oi'm hurryin' to git this fince all painted before me paint gives out!"

And that is peculiarly adaptable to the Westy Hogan tribe. Those scores—those trophies—and those one hundred and sixty-two thousand five hundred and ten targets! Shure and it all had to be did before their shells gave out, and it was done! Atlantic City was again the scene of the mightiest shooting meet in the year, always excepting the Grand American Handicap. This tournament was remarkable for the high scores, the different events and the long list of magnificent trophies. Lester German, the professional who breaks and makes records, went still farther on this occasion, scoring 499 out of 500 targets in the regular program, making the marvelous long run of 372. Woolfolk Henderson, who last year was both the winner of the G. A. H. and of the National Amateur Championship, led in the amateur class with 493x500. Other high scores were: F. S. Wright of New York, 489x500; A. Heil of Pennsylvania, 485x500; L. Worthington of Maryland, 482x500. J. W. Morrell Hawkins and E. H. Starr tied with 481 for third high professional. The state five-man team race was won by the New York team with 483x500.

Woolfolk Henderson, high amateur at Westy Hogan's shoot.

On Practice Day, Tuesday, L. S. German dropped one target each in his sixth and ninth strings, bringing down 148 in the finish. This score was duplicated by H. H. Stevens, Woolfolk Henderson and J. M. Hawkins, with George Fish, J. S. Young and H. S. Hilles following close with 147. Mrs. F. Remy of Indiana landed 110. On the first regular shooting day German again went high in the professional class with the full program of 175, and Henderson in the amateur with but one less. Mrs. Harrison of New York came high among the ladies with 156, Mrs. Vogel breaking 142 and Mrs. F. Remy 126. On the second day the same high class of scores was presented, Mr. German again leadng with his straight program followed consistently by Mr. Henderson with 172x175.

J. Morrell Hawkins, 148x150 on Westy Hogan Practice Day.

Mrs. L. G. Vogel broke 158, Mrs. Harrison 144, Mrs. Remy 134, and Mrs. Ehle 76. The Westy Hogan championship shot for on this day was won by H. Powers with 98x100 and 20 in shoot-off. Second prize by Woolfolk Henderson, 98x100; 19 in shoot-off. There were also handsome trophies for the next ten winners. The third day was when L. S. German dropped his first target, bringing his score to 149. F. S. Wright and Mrs. Wolstencrof with 148 nosed Woolfolk Henderson down to third place with 147. Mrs. Vogel led the ladies with 136, Mrs. Harrison breaking 128, Mrs. Remy 126 and Mrs. Ehle 62x135. The fourth and last day was given up to the Bull Durham Handicap, the Du Pont trophy and to the match at doubles. C. D. Coburn won the Bull Durham from 20 yards; score 96x100. Second prize went to H. B. Shoop from 19 yards, 94x100. A. Heil won first place on Du Pont trophy from 20 yards with 97x100.

In the 88% Special, Mrs. H. Harrison broke 87x100; Mrs. L. G. Vogel 84x100; Mrs. Remy 81x100, and Mrs. Ray Boyer, 65.

RESULTS OF SAN JOSE SHOOT.

O. N. Ford, the expert shot of San José, was high over the whole field of trap shooters in the preliminary of the annual registered shoot of the San José Blue Rock Club, held Sept. 5 and 6. Mr. Ford's high score of 98x100 beat the amateur and professional entries, which included the best marksmen on the coast.

H. E. Paston of Frisco with 95 and L. Hawkshurst also of Frisco with 92 came after. J. P. Haese of Santa Barbara was the amateur making next high score; Poston and Hawkeshurst being "pros."

Other scores were: N. A. Howard, San Francisco, 89; J. J. Downs, 89; R. Bungay, 88; E. W. Jack, San José, 86; C. R. Arquest,

U.S. ARMY AND NAVY GOODS!

WRITE FOR FREE CATALOG SHOWING THOUSANDS OF BARGAINS.
WE ARE THE LARGEST DEALERS IN ARMY AND NAVY GOODS IN THE WORLD.

Army and Navy Goods must be the best that can be produced. The government specifications are the most stringent and the government inspectors the most exacting it is possible to be. For this reason government goods are the best that can be produced. But Uncle Sam sometimes overbuys, or changes the specifications or rejects the goods because slightly different from the specifications. We then buy for practically our own price, at auction sales, these discarded goods. It is in this way that we can offer you goods at only a fraction of their original cost. Our purchases the past summer have been very heavy, and we offer you a vast number of exceptional bargains.

ORDER SOME OF THESE BIG BARGAINS AND ASK FOR OUR FREE CATALOG

Sheffield Steel English Knife

With Scabbard, 95c

Bought from the English Government

Cost over $3.00 to make, 8 to 10-inch blade; razor edge. Fine as hunting, sticking, pruning, butcher, kitchen or general purpose knife. Don't fail to secure one. Price, prepaid.....95c

U. S. ARMY STIFF BRIM HAT

Prepaid, $1.58

Regulation Olive Drab color; stiff brim; high, dented crown. Sizes 6⅞ to 7¾. Order direct from this ad. Prepaid for only $1.58.

ALUMINUM PERCOLATOR

Patent never-come-off handle, 9-cup size, $2.25 value, while stock lasts, prepaid.....$1.08

Six Quart Aluminum Tea Kettle, prepaid, $1.45.

Four-Quart Covered Berlin Kettle, prepaid, $0.72.

U. S. Haversacks, 45c

Strong, waterproof tan canvas, large and roomy; two pockets. Makes excellent school, game or lunch bags; two straps together make unexcelled saddle bags. Range from 12 to 14 inches square. The adjustable leather strap is worth our price for all. Prices, prepaid: Small size, 50c; large size, 75c.

U. S. Army Wool Flannel Shirts

Made of fine wool olive drab shirting flannel. Very warm, handsome in appearance. Cut full, and well made. Folded or bellows pockets; regular collar, as shown, or military style. Sizes 14 to 19. Price, prepaid, $1.88.

"Big Value" wool flannel shirts in blue or gray. The usual $1.50 shirt at retail. State color wanted and size. Each, prepaid, 95c.

Long-Wearing U. S. Army Socks

Army socks must wear. The government could use no other kind. The following 3 styles of army socks were produced after much experimenting. You can save money by wearing them. Order sample pairs and try them.

U. S. olive drab cotton socks, seamless; long leg; ribbed tops. Dozen, prepaid, $1.25; pair, prepaid, 12c.

U. S. gray wool sock. Light weight, Merino finish; 55 per cent wool. Six pairs, prepaid, $1.10; pair, prepaid, 19c.

U. S. blue wool sock. All wool heavy. Six pairs, prepaid, $1.40; pair 25c.

U. S. ARMY ALL-WOOL BLANKET

66x84 in. Weight, 5 lb. $4.95, Prepaid, if bought direct from this ad. Beautiful Olive Drab

We have sold many thousands of the U. S. Army blankets. They never fail to please. Were built for hard service. A pair will last you almost a lifetime. Heavy, strong and warm. All pure wool. Comes with or without U. S. in center. State which is wanted. The exact blanket the government is using today. Order a pair of these fine blankets. We guarantee them to please you, or will refund your money. If bought direct from this ad we will prepay them. Price, prepaid, each, $4.95.

U. S. ARMY TENTS

Best Tent it is possible to make. Like new

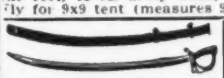
15-oz. Army Duck. Dia., 16 ft.

One of our greatest bargains. Genuine 15-ounce army duck—wind, water and storm proof. 16 feet in diameter, 11-foot center, 3-foot side wall. Steel triped support. 6-inch sod cloth. Ventilator top. Well roped. Made by hand. Have seen service, but are in fine condition. Cost several times our price to make. Fully guaranteed to please. Ship. wt., about 85 lbs. Either white or army khaki color. Could not be produced for more than twice our price. Price, bought direct from this ad, only $15.95.

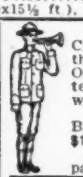
U. S. ARMY WALL TENTS

Made of white army duck. Strong and well built. Wind, storm and waterproof. Have seen service, but are in fine condition. Good high walls. Complete with poles, ropes, stakes, etc. Two sizes:

7x8 feet, 10-oz. army duck, Price.....$6.50
9x9 feet, 12-oz. army duck, Price..... 7.75
Fly for 9x9 tent (measures 9x15½ ft.), Price..... 4.00



U. S. Cavalry Sabre with scabbard. In fine condition. Worth much more than our price. Used in the Civil War. Valuable relic. Blade, 36½ inches long. Prepaid, $2.45.



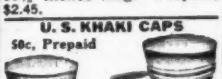
Heavy Khaki Clothing, bought of the U. S. Gov't. Outwears any material of equal weight.

U. S. Riding Breeches, prepaid, $1.95.

U. S. Coats, prepaid, $1.50.

U. S. KHAKI CAPS

50c, Prepaid



Bought from U. S. Government. Cost Government 68c in great quantities. Leather foundation and peak, detachable khaki cover. Just the thing for outing, rowing, cycling and general wear. Sizes up to 7⅞. Extra covers, any size, prepaid, for 9c.

U. S. LEGGINS

U. S. Canvas Puttee Leggings, olive drab, strong wrapping strap; state size. Prepaid, pair, 95c.

U. S. lightweight leather puttees, prepaid, pair, $1.22.

Heavy all-leather russet leggings, prepaid, pair, $2.35

ELK SKIN HIGH CUTS

Elk Skin High Cuts, 16 inches. Gray color. Two full soles. All sizes. A handsome boot. $7.50 value, prepaid, for, pair, $5.75.

18 in. russet leather high cuts; per pair, prepaid, $4.95

CANTEENS

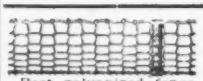
U. S. Style Canteens. New. Heavy tin. Flannelcovered. Web shoulder strap. 3-pt. capacity. Each, prepaid, 45c.

U. S. Colt't Revolvers

45 calibre, single action. Fine condition. Prepaid, $8.50.

U. S. ARMY OVERCOATS

$2.95 It is hard to believe that we can sell you a brand new and perfect U. S. Army all pure wool overcoat, but here it is. Bought from the U. S. Gov't. Pure wool blue kersey cloth coat complete with detachable cape and wool lined; capes are lined with blue, red or yellow serge. Sizes 32 to 44 chest. **Mention size,** and order direct from this ad.



HOG FENCE, 15c

Best galvanized fence. No. 11 top wire, barbed bottom wire, No. 14 stay and line wires. 6-inch stays. Makes good fence if two barbed wires are used on top. Made in 26 and 32-inch height. Price per rod, 26-inch.....15c
Price per rod, 32-inch.....18c

ENGLISH BAYONETS, 50c

Bought from the English Government. New and bright, 12 inches long. Hardwood handle. Can be ground down and make fine knives. Best Sheffield steel. Complete with leather scabbard, each, prepaid, 50c.

U. S. ARMY SHOES

Best wearing, best fitting shoe made. Fine russet calf. Neat in appearance. Must be strong or the government could not use them.

State size; Price, prepaid, **$3.95.**

These Cross Guns Are Free

Send us 2c to pay postage, and we will mail you a pair of these cross guns or cross cannon free. Either bronze or gilt. Cost regularly 25c. Make attractive ornament. State whether gilt or bronze is wanted.

FREE

This "Book of 1000 Bargains." A postal card request will bring it. Write today.

CAL HIRSCH & SONS, U. S. Dept. 240 St. Louis, Mo.

San José, 83; Mrs. Ada Schilling, San José, 82.

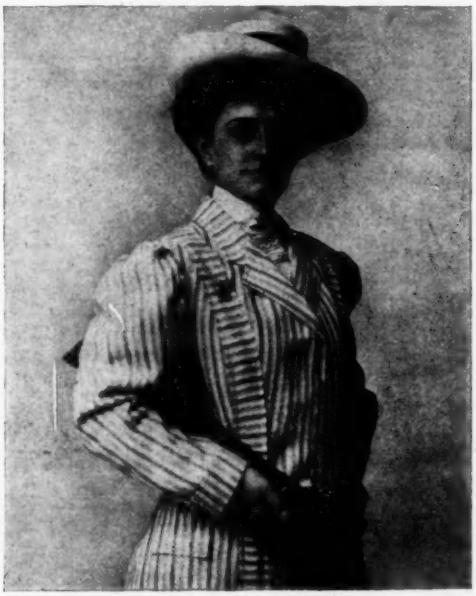
O. N. Ford pulled down the principal honors of first day when he landed the doubles championship of California with 45x50. A. F. Baumgartner was second with 41. High amateur average of the day went to Heinie Pfirrman of Los Angeles with 172x180; A. Bungay next with 169, followed by O. N. Ford with 168; A. Flickeringer also 168 and George Anderson of San José 167. R. C. Reed made the long run of the day with 105 straight and led off the professional, dividing honors with H. F. Poston with high average of 172x180, the same as the high amateur score. Mrs. Ada Schilling of San José and Miss Genevieve Myers of San Francisco were participants, Mrs. Schilling's score being 198x230 and Miss Myers' 158x230. Each won a handsome bread plate donated by Mr. Ford, and in the long runs Mr. Schilling won a sterling lemon fork presented by Miss Harriet Hammond of the Nemours Ladies' Club at Wilmington, Del., and Miss Myers a sterling spoon from the editor of this department, the scores being 18 and 17 respectively.

CALIFORNIA LADY TRAP SHOOTERS.

To left, Mrs. Ada Schilling of San José, who is considered the best lady trap shooter on the Pacific Coast; to right, Mrs. G. J. Meyers of San Francisco, winner of one of Outdoor Life's trophies recently offered at the San José shoot by our trap shooting editor.

MRS. L. G. VOGEL, PIONEER WOMAN TRAP EXPERT.

A number of years before Beginner's Day was inaugurated, or even conceived of, among the women of unusual ability as expert trapshooters was Miss Anna Reiker of Lancaster, Pa., now Mrs. L. G. Vogel of Detroit. Mrs. Vogel is famous for her wing shooting as well as her dexterity in smashing clay targets, and a few of her scores gathered from her work in the past few years are herewith given. At one shoot in 1909, Miss Reiker won a handsome silver cup at a live bird handicap, scoring 20 straight. Before an assemblage of 2,000 spectators Miss Reiker and Mr. Fred Coleman put on a remarkable exhibition of live bird shooting, Miss Reiker making a new world's record for women. She killed a total of 93x100, killing her last 33 straight from 28 yards. Other scores at targets are 326x360, 321x350, 189x200, 327x360, 156x175. At Detroit in June, 1913, she won high general averages, including two special events, over all professionals and amateurs, scoring 396x425. In March, 1914, won Ladies' Individual Championship Cup at the Roof Garden Tournament in New York with 44x50. At the fifteenth annual tournament of the Indians at Cedar Point, Ohio, in June, 1914, she made a great show-



Mrs. L. G. Vogel, a prominent contestant in the Westy Hogan Shoot.

ing, 450x500 for three days, and in special events of 25 made 23 and 24. In the Indian Handicap 98x100 and in one handicap event 35x50 from 19 yards. Mrs. Vogel is the only woman member of the famous Westy Hogan shooting fraternity, her name in this jolly organization being "Nan Hogan."

MISSOURI STATE TOURNAMENT.

The condensed report of the Missouri State Tournament held at St. Louis August 12, 13 and 14, is as follows:

The Interstate Association State Championship won by D. J. Holland of Springfield with 100 straight. The Grand Missouri Handicap event won by Ben L. Cawi, St. Louis, with 96x100 from 18 yards and 19x20 in shoot-off. The double target championship event won by Harve Dixon, Oronogo, Mo., 46x50. Amateur average, Peter Baggerman, St. Louis, 446x450. Professional average, tie between A. Killam and C. G. Spencer of St. Louis, 444x450. High general average on all targets, C. G. Spencer, St. Louis, 577x600. The M. A. A. Introductory Trophy won by Louis Seidner of Morrison, Mo., with 95x100 and 20 straight in shoot-off. Two-men team contest won by St. Louis Trap Shooters' Association team composed of J. W. Bell and Peter Baggerman, 50 straight. Long amateur run by D. J. Holland with 312 straight. Long professional run by A. Killam with 178 straight. High general amateur average, C.

THERE ARE MANY REASONS WHY YOU SHOULD USE

SIDNEY PUNCTURELESS PNEUMATIC TIRES

SOME OF WHICH ARE

1.—It is an easy riding pneumatic tire.
2.—It is not solid.
3.—It can not puncture or "blow out."
4.—It fits all standard casings and tubes.
5.—It is easily applied.
6.—It is the most durable tire made.
7.—It is trouble proof.
8.—It makes automobiling safe and enjoyable.
9.—It is the only absolutely punctureless tire in the world.
10.—A full set costing less money than one good new casing.

SIDNEY PUNCTURELESS PNEUMATIC TIRE COMPANY

MANUFACTURERS OF

The Only Absolutely "PUNCTURE PROOF" Tire in the World for Automobiles, Motor Cycles, Bicycles, and all Vehicles Using Pneumatic Tires. : : : Send for Price List and Circulars

SIDNEY PUNCTURELESS PNEUMATIC TIRE COMPANY

OFFICE AND FACTORIES:

EAST SAINT LOUIS, ILLINOIS, U. S. A.

Please mention Outdoor Life when writing.

Do Business by Mail

Start with accurate lists of names we furnish—build solidly. Choose from the following or any others desired.

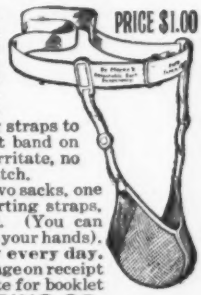
Apron Mfrs.	Wealthy Men
Cheese Box Mfrs.	Ice Mfrs.
Shoe Retailers	Doctors
Tin Can Mfrs.	Axle Grease Mfrs.
Druggists	Railroad Employees
Auto Owners	Contractors

Our complete book of mailing statistics on 7000 classes of prospective customers free.

Ross-Gould, 808-S Olive Street, St. Louis.

Ross-Gould Mailing Lists St. Louis

ANY POSITION IS COMFORTABLE



If you wear a **Separate Sack Suspensory.** It will not pinch, pull or strain, because it is made as nature intended this support to be. It has no leg straps to chafe you, no front band on sack to press and irritate, no metal slides to scratch.

Each outfit has two sacks, one of which you clip on the supporting straps, while the other is being cleansed. (You can wash the S.S.S. sack as quickly as your hands). This means **a clean suspensory every day.**

All sizes. Mailed in plain package on receipt of price. Goods guaranteed. Write for booklet

MEYERS MANUFACTURING CO.

60 Park Place, WATERTOWN, N. Y.

Practice in the U. S. Courts in Patent, Trademark and Copyright Cases.
Patents obtained in U. S. and Foreign Countries.
Trademarks registered and Copyrights procured.

A. J. O'BRIEN

PATENT LAWYER.

Suite 301-303 Continental Bldg. Phone Main 2858.

DENVER, COLORADO.

Wanted to dispose of 143 acres Upper Wisconsin land bordering beautiful Lake Riley. Situation on Northwestern Railway close to Mercer and Manitowish. Has over three fourths mile lake frontage. Ideal spot for hunting lodge. Excellent hunting and splendid fishing. Near Camp Jerome, the Hunting Lodge of Chas. A. Comiskey, President of Chicago White Sox Baseball Club. Low Price—address

A. B. CODE, 1324 Otis Building, CHICAGO, ILLINOIS

The Filson Cruising Shirt for Fishing, Hunting, Outing

(U. S. and Canadian Patents)

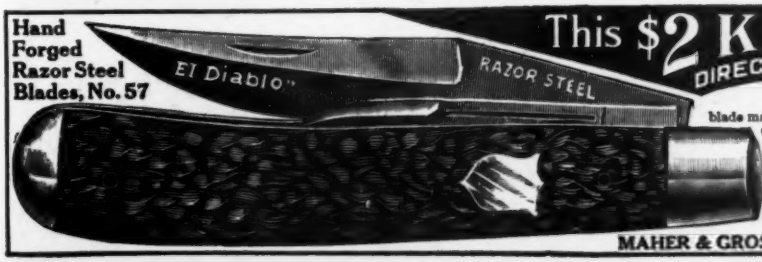
Recommended by cruisers for whom it was originally designed. It is the most practical garment for all outdoor life. Has six pockets, one large back pocket, 30x21 inches, making a complete pack. Best material and weight guaranteed.

U. S. Shelter Khaki, $3.25; Waterproofed Khaki, $3.75; 20 oz. Gray or Blue Flannel, $5.00; 24 oz. Red or Black Plaid Mackinaw, $7.00; 20 oz. Forestry Cloth, $8.00; 30 oz. Red Mackinaw, $7.00; 24 oz. Plain Blue Mackinaw, $7.00. Send collar size when ordering.

We make outing clothing for men and women—woolen shirts, khaki clothing, mackinaw clothing, corduroy clothing, woolen comforters, sleeping bags. Send for Catalog 8 which describes these and gives prices. We deliver by Parcel Post.

C. C. FILSON, 1011 First Ave., SEATTLE, WASH.

Hand Forged Razor Steel Blades, No. 57



This $2 KNIFE 83¢ POST PAID

DIRECT AT FACTORY PRICE

Handy shaped blade makes this knife best for mechanics, sportsmen and farmers; light but strong; resharpened easily. Stag handle, German silver finish; blades file tested, hand forged from razor steel and warranted. Sample 83c, 3 for $2.00 postpaid. Send for our 80 Page List and "How to use a Razor" FREE

MAHER & GROSH CO., 94 A St., Toledo, Ohio

H. Reilley, Salt Lake City, Utah, with 576x600.

Mrs. J. T. Austin, Mrs. S. E. Burke and Mrs. J. W. Burrows represented the lady trap shooters and made a fine showing, Mrs. Burrows scoring 90 in the Missouri Handicap.

GRAND AMERICAN FOR WOMEN? WELL, I GUESS SO!

It will be a source of joy to the new regiment of trap shooters—the ladies—consequently to the gentlemen—that the wheels are beginning to turn which will set the machinery in motion for a Grand American Handicap for Ladies. Heretofore there has been no provision made for amateurs of the fair sex, but in another year it is expected several squads will face the traps in petticoats. The outline suggested to date is that a contest for national amateur championship be held in events of 100 targets, all at 16 yards rise. Then a preliminary handicap ranging from 16 to 20 yards, with a similar event the third day for a women's Grand American Handicap. Believe us—we'll be there with the bells on!

NOTES.

Reading not long ago of the marvelous benefits to be derived from being fitted with a try-gun, caused this editor to look up a letter written to her by one of the "Big Guns" who, judging from his scores, doesn't feel the need of a try-gun for his own use. Thinking this little human nature story may be of interest to the many, and may wake up personal memories to the few, here goes: "About ten years ago, at a shoot twenty-five men were lined up, each man to shoot one shot with the other fellow's gun. A wonderful stunt, you may guess! Some were short, some long, some lean, some fat—that was the men. The guns were doubles, singles, automatics and pump guns. And, believe me, Old Daddy Heikes broke 24! No one else got over eighteen. So they all agreed that 'Pop' was the only natural-born shooter, and the legend went round that he could shoot a broomstick if it would go off!"

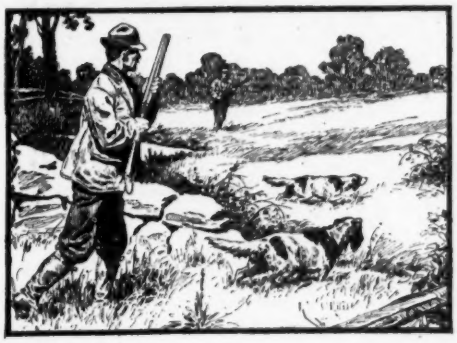
At the sixth tournament, the last in a series held at Bridgeport, Conn., Aug. 14, many good scores were in evidence and the shoot was made doubly interesting by a number of handsome prizes and trophies. A. E. Sibley and H. H. Stevens, professionals, headed the list with 146x150 each; A. L. Ivins and Dr. G. Martin, amateurs, following with 145 and 144. Mrs. F. Rogers, Miss Laura Boles and Mrs. Hessian were the ladies who participated.

Beginners' Day! Just give it the once over, will you? It really begins to look as if the whole country were going gun-mad. Well, at the rate they are falling for the "sport alluring," it is safe to predict that the grand old U. S. will never have such a creation as a "war bride." Trap shooting inspires courage, promotes health, increases bodily vigor and resistance to the ills flesh is heir to. It creates poise and self-confidence, making body and brain pull together and improves the vision. Five years ago the women who were prominent as good trappists could be counted on the fingers of both hands, but now they are listed by hundreds. Beginners Day is acting like a dash of cold water on a somnambulist, and is the last touch needed to bring out the hordes of men and women who have been procrastinating.

About the biggest thing that happens out our way every year is the simon pure amateur shoot staged by "Uncle Bob" Elliott at Kansas City. This year the simon-pure fell on Aug. 31-Sept. 3. It is at these aggregations that the crowds of 88-percenters meet to make and break amateur records in this class. On practice day some real creditable scores were run up on 100 targets, E. Everest leading with 92, and 24 in the shoot-off. On the first real day Frank Cunningham came first with 180x200. W. H. McCreery won the Missouri Valley Championship with 10 flyers straight and 9 in shoot-off. Winner on second day was "Doc" Greenlee, whose score was 182x200. Dan Dahlene won Simon Pure Amateur Target Championship with 182x200. Walter Lovett the Flyer Handicap Championship with 24x25. High amateur on 500 targets was Dan Dahlene with 450x500. P. P. Whitehair second with 440. Among the professionals H. Kennicott won first with 487x500 and Ed O'Brien second with 483x500. We can not help but wonder what kept the ladies at home.

The eighth annual tournament of the Sioux Falls (S. D.) Gun Club went down on record for the big scores made by the shooters—both local and the visitors. This was held Aug. 25-26. The two high professionals, J. E. Dickey and Charles Hymer, "busted" 292 and 290 respectively out of 300; H. G. Taylor and A. L. French coming close after with 291 and 280. Mr. Tom Wilkes of San Francisco put up a fine shotgun, which was won in a shoot-off of 20 birds straight by Mr. Arthur French after a tie with Dr. Max Eisner on 49x50; Dr. Eisner was but one short in the home run.

Princeton, Dartmouth, Yale, Harvard and Cornell have formed an Intercollegiate Trap-Shooting Association. The purpose of the organization is "to regulate inter-collegiate trap shooting competition and increase interest in trap shooting as a college sport." Stanley F. Withe, Harvard, '14, has been elected secretary-manager of the association. F. C. Huntress, Dartmouth '16, and H. L. Gordon, Jr., Princeton, '16, are members of the executive council which will make arrangements for the Intercollegiate Championship Shoot to be held at Dartmouth this fall.



Now is the Shooter's Time

The hunting season is here, and the call of the woods, the fields and the marshes is not to be denied.

Get ready! See that your scattergun is oiled and easy. Get a few hundred shots practice at the gun club to ensure success in the field.

Get shells loaded with the powders that win.

DU PONT

SMOKELESS SHOTGUN POWDERS

DUPONT : BALLISTITE : SCHULTZE
DUPONT BLACK SPORTING POWDER

Each has its good points: Dupont—high velocity; Ballistite—waterproof; Schultze—easy on the shoulder; Dupont Black Sporting—a favorite for 114 years. All give even patterns and are bound to get desired results if your aim is right. Du Pont loads, the choice of more than 80% of American shooters, are obtainable in all standard shells or in bulk at your dealer's.

Write for Booklet 23 S. O.

E. I. DU PONT DE NEMOURS & CO.
Established 1802. Pioneer Powder Makers of America
WILMINGTON, DELAWARE

3 Make These Tests With Your Gun

A shotgun expert discovered three simple, interesting tests of shot shell superiority that anyone can make. Write your name and address and the name and address of the store where you buy shells across the margin of this advertisement. Return to us and we will send you an order on your dealer for three free

US THE BLACK SHELLS
Smokeless and Black Powders

and mail a copy of our booklet, "How to Test Shells." You can make these tests in your own back yard. Make similar tests with three shells of any other make and find out that

The strong, quick primer insures rapid ignition.
The double-size flash-passage gives complete ignition.
The shell-head design gives maximum forward drive.
The bevel crimp offers exactly the right resistance.
Famous Tatham shot are uniform in size and weight.
These combine for greater speed, better pattern.
The wads of best long-haired felt are waterproofed.
The paper is specially waterproofed and extra strong.
This and firm crimp mean smooth feed and ejection.
And that the shell can be reloaded again and again.

Write for the Test Material Today

UNITED STATES CARTRIDGE COMPANY
2255 Trinity Building New York

NATIONAL LEAD COMPANY, General Selling Agents; Also JOHN T. LEWIS & BROS. CO., Philadelphia; UNITED LEAD CO., New York; SELBY SMELTING & LEAD CO., San Francisco, distributors on Pacific Coast.

BOOKS FOR THE SPORTSMAN

Our Dooryard Friends, by Sara V. Prueser; 204 pages; illustrated; the Platform, Chicago, Ill.

The author of this book surely knows something about nature, and surely has fine descriptive powers. Books of this kind help to make the world better. This one should create a human interest in the preservation and protection of birds, the best friend of the farmer. A general reading of "Our Dooryard Friends," would insure the preservation of our crops, the protection of our orchards and woodlands from the insect pests which prey upon them. A copy of this book should be in the hands of every boy of our country, for it cannot but help to instill into him a higher ideal of life and life's meaning.

The Winning Shot, by Jerome D. Travers; 258 pages; illustrated; $1.25 net; Doubleday, Page & Co., New York.

This story tells of Mr. Travers' experiences with the best golfers in Great Britain and America. It has first-hand information on how such men as Hilton, Vardon, Travis, Ouimet and Evans go about their work of beating Par and reducing Bogie to subjection; on what the game's greatest stars have done, and how they do it—their strength and their weakness. It tells of the wonders of golf psychology, and gives many inside tips and suggestions off the beaten path that will be of real help to amateurs.

A Circulation Representative Who Has Made Good

J. W. Peck.

Few sportsmen realize without giving the subject much thought, what a great power can be exerted for the cause of game protection by a traveling man in the employ of a sportsman's magazine. Eight years ago the subject of our sketch, Mr. J. W. Peck, began soliciting subscriptions for us in the Northwest. At that time, being the owner of a big apple orchard at North Yakima, Wash., Mr. Peck's work was rather of a desultory order, as his apples had to be picked and marketed and his orchard looked after generally. But even at that, he gathered in over a thousand subscriptions a year.

A few years ago, becoming enamored of the work of game protection and of traveling, he disposed of his orchard and launched out as a permanent circulation traveler. Since that time there have been few months that Mr. Peck has not collected 200 subscriptions for Outdoor Life, and some during which he has topped the 300-mark.

We publish his photograph herewith and tell our readers what he has done in order that others in sections out of his territory may go and do likewise. Being of an earnest, amiable disposition, it is not hard for him to make friends; and the disciples of game protection are always glad to meet him, for, like the pollen that is blown from the bush to fruitful soil, so is his gospel carried from man to man, and in many cases it sinks in and finds a fertile resting place.

Statement

Statement of the ownership, management, etc., of Outdoor Life, published monthly at Denver, Colorado, required by the Act of August 24, 1912; Editor, J. A. McGuire, Denver, Colorado; managing editor, J. A. McGuire, Denver, Colorado; business manager, M. E. McCumber, Denver, Colorado; publisher, Outdoor Life Pub. Co., Denver, Colorado;.

"Owners—(if a corporation, give its name and the names and addresses of stockholders holding 1 per cent or more of total amount of stock) the Outdoor Life Publishing Co. J. A. McGuire, only stockholder owning 1 per cent or more of total amount of stock.

Known bondholders, mortgagees and other security holders, holding 1 per cent or more of total amount of bonds, mortgages or other securities; None.

(Signed) J. A. McGUIRE,
Editor, Publisher and Owner.

Sworn to and subscribed before me this 20th day of September, 1915.

(Seal) LULU O. TROUTE,
Notary Public.

(My commission expires July 22, 1916.)

Your New Gun

HAVE you ever bought anything, and always afterwards had an indefinable feeling of wonder whether it wouldn't have been better if you had selected something a little different?

The very first time you go out among your friends with a Fox Gun, you will have a mighty comfortable feeling that your selection was right.

For Ex-President Theodore Roosevelt only voiced the sentiments of the best informed gunners in the world when he said about the Fox—"No better gun was ever made."

Every Fox made, from $25 to $1000, is absolutely guaranteed for life.

Examine a Fox at your dealer's, and write for handsome new catalog today.

A. H. Fox Gun Company, 4654 No. 18th St. Philadelphia, Pa.

FOX GUN

Rotary Bolt | Guaranteed Coil Main Spring | One piece hammer firing pin

Keep Your Gun, Golf Clubs

and all bright parts of Metal free from RUST with

"Corol"

Anti-Rust Compound

Price, trial tube, 10c; large tube, 15c; 2 fluid oz can, 35c; 8 fluid oz. can, 75c. If your dealer does not handle it write us direct with dealers name. Dealers write in for our special fall inducement

COROL COMPANY

1433 Fisher Bldg. CHICAGO, ILL.

An Old Story with a Happy Ending

JUST PRESS HERE

CHAPTER 1.
A "fumbled" shell—Grabbed the wrong end—Lost the duck.

CHAPTER 2.
A "wet shell"—Would not go in the gun—Lost another duck.

CHAPTER 3.
"Another" wet shell—Top wad fell out—Shot lost out—Lost a good shot.

CHAPTER 4.
A "mashed crimp"—Gun jammed—Luck "damned"—A whole flock gone without a chance at 'em.

FINAL CHAPTER.

Bought a

"Press-Ur-Shell" Magazine Shell Vest

No part of shells exposed—Can't get wet—Keeps crimps perfect—Drops shells "base down" into your hand—*A perfect* vest to make the sportsman happy—Less worry—Fewer misses—Less excuses—More game.

APPENDIX

Vest made of Army Duck, 36" to 48" chest—holds 40 shells, 12-16-20 ga. $2.50 prepaid and money back QUICK, if dissatisfied—Ask your dealer or send order direct to

PRESS-UR-SHELL MFG. CO.
122 New Market St., Dayton, Ohio

Patented April 21, 1914

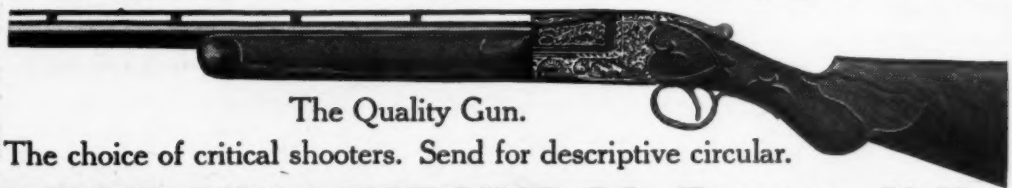
Stewart's Phosphor Bronze Sight

The only modern hand finished sight with the *correct* shaped bead. Made to *fit any arm*. Guaranteed satisfactory or money returned. *Price $1.50 postpaid.* Send postal for my sight book showing cuts of many sights and how to use them.

If your dealer cannot furnish Stewart sights order direct from P. O. Box 955, **C. W. DU BOIS, Tacoma, Wash.**

BAKER SINGLE BARREL TRAP GUN—WINS AGAIN

At Atlantic City, N. J., Sept. 17th, Frank S. Wright wins ATLANTIC CITY TROPHY, 148 x 500. Mr. Wright's score on whole program 489 x 500.



The Quality Gun.

The choice of critical shooters. Send for descriptive circular.

BAKER GUN & FORGING CO., BATAVIA, N. Y.

"Steel where steel belongs" Shells

Will make your Fall hunt a success!

They have steel reinforcing in the head, placed there to give protection to the shooter.

Other features of the shell are the perfect, *sure-fire* primer, giving proper ignition to the powder and insuring greatest efficiency to each load; gun wads made of pure elastic felt, (manufactured by us for this special purpose) which properly confine the gases, improve the shot pattern and prevent leading; shot absolutely uniform in size and perfect in finish; the firm beveled crimp which holds its shape and permits the shell to operate freely in *all kinds* of repeating and automatic guns.

Peters Quality is just as desirable in the field as in trap shooting. Do not be persuaded into trying something "just as good."

THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio

Branches: New York New Orleans San Francisco

Here's another "progressive"

Now Ready

DU PONT IMPROVED MILITARY RIFE POWDER

No. 18

For small bore, high-power cartridges of moderate capacity.

2250 f. s. velocity in the .30/30 with 170 grain bullet.
2275 f. s. velocity in the .32 Spl. with 170 grain bullet.
2100 f. s. velocity in the .32/40 with 165 grain bullet.

For information address:

Rifle Smokeless Division

E. I. DU PONT DE NEMOURS & CO.

WILMINGTON, DELAWARE